SD-3110

In-Vehicle Computing

User's Manual

Version 1.1

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1.0	1.1	Jan 9, 2013	Dual SIM Card – Front Panel	Stanley Chou

SD-OMEGA (HK) CO., LTD

User Manual

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This device complies to Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must withstand any background interference including those that may cause undesired operation.

Safety Information

Read the following precautions before setting up a SD-OMEGA Product.

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

CAUTION

Incorrectly replacing the battery may damage this computer. Replace only with the same or its equivalent as recommended by SD-OMEGA (HK) CO., LTD Dispose used battery according to the manufacturer's instructions.

Technical Support

Please do not hesitate to call or e-mail our customer service when you still cannot fix the problems.

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E-mail : sales@sd-omega.com

Website : www.sd-omega.com

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1.0
INTRODUCTION

1.0 INTRODUCTION

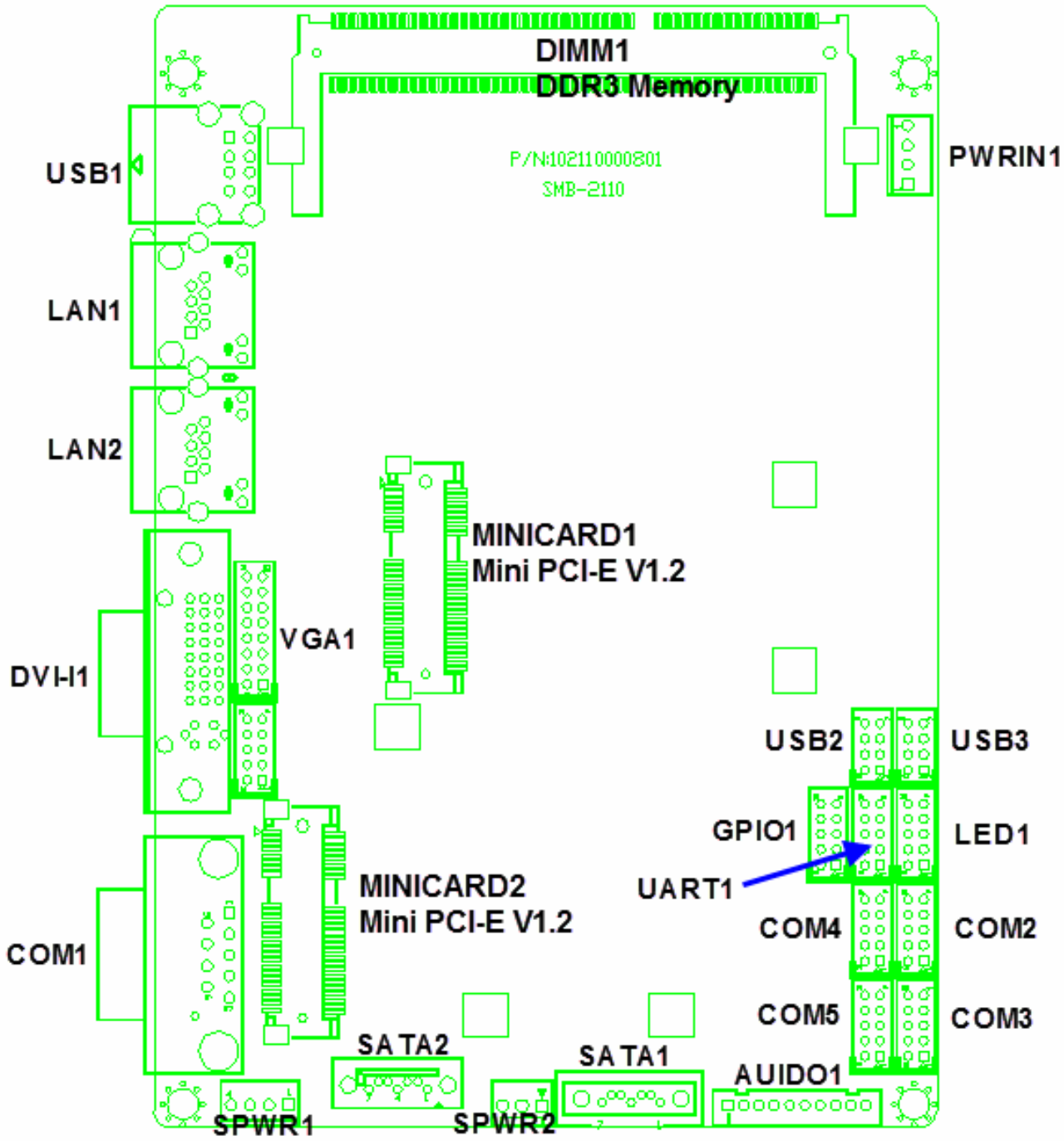
1.1 Model Specification

System	
CPU	Intel Cedarview Atom D2550 Dual Core 1.8GHz Processor
Memory	1 x DDR3 1066MHz SO-DIMM up to 4GB
Graphics	Intel GMA3650
ATA	2 x Serial ATA 2.0 Ports
LAN Chipset	2 x Realtek 8111E Gigabit Ethernet
Watchdog	1 ~ 255 level reset
I/O	
Serial Port	Support 2 x RS-232 (COM1 with RS-232/422/485)
USB Port	3 x USB 2.0 ports
LAN	2 x RJ45 ports for GbE
Video Port	1 x DVI-I Female Connector for DVI-D and VGA Output
GPIO Port	Support 2 in and 2 out with Relay 12V / 100mA
Audio	Mic-in/Line-out
Expansion Bus	3 x Mini-Card Slots
SIM Card Socket	2 x SIM Card sockets supported onboard with eject
Antenna	4 x SMA-type External Antenna Connectors for WLAN / UMTS /

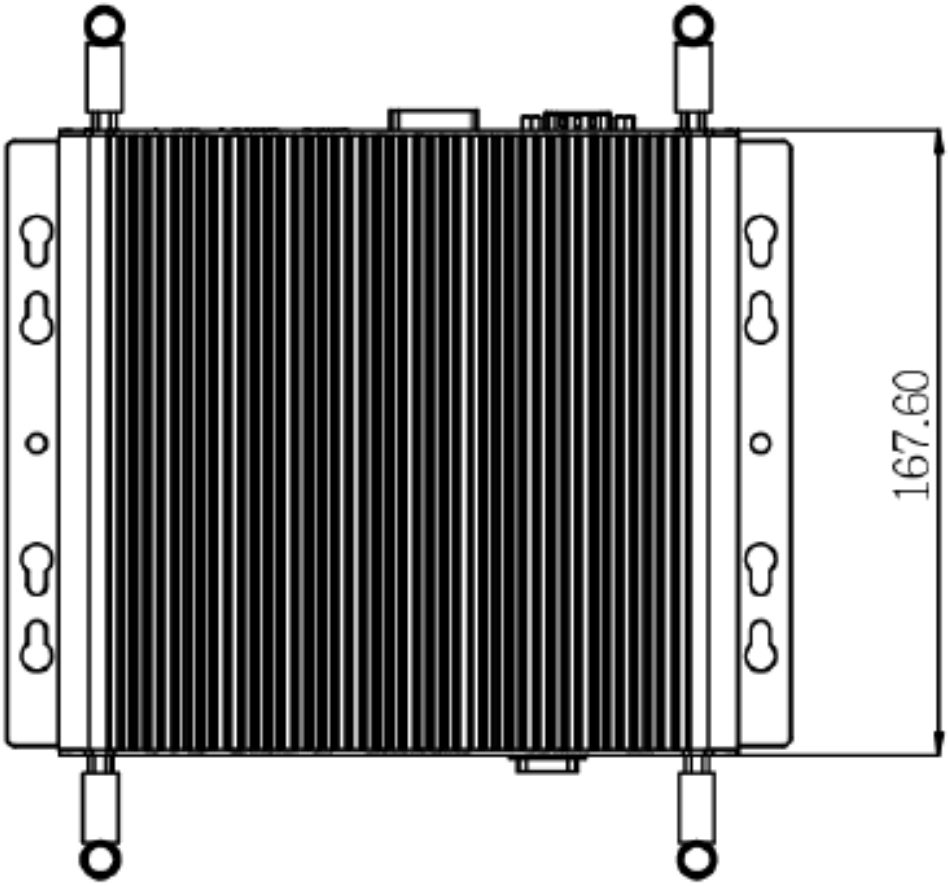
	GSM / GPRS / GPS / Bluetooth
Storage	
Type	1 x 2.5” drive bay for SATA Type Hard Disk Drive / SSD 1 x SATA DOM
Power Management	
Power Input	9V - 32V DC Power Input
Power Management	Vehicle Power Ignition for Variety Vehicle
Power Off Control	Power off Delay Time Setting by Software, Default is 5 Mins
Backup Battery	Internal Battery Kit for 10 Mins Operating (Optional)
Qualification	
Certifications	CE, FCC Class A, eMark Compliance
Environment	
Operating Temp.	-40 ~ 70ºC (SSD), ambient w/ air
Storage Temp.	-40 ~ 80ºC
Relative Humidity	10 ~ 90% (non-condensing)
Vibration (random)	2.5g@5~500 Hz with SSD
Vibration Operating	MIL-STD-810F, Method 514.5, Category 20, Ground Vehicle-Highway
Truck Storage	MIL-STD-810F, Method 514.5, Category 24, Integrity Test
Shock	Operating: MIL-STD-810F, Method 516.5, Procedure I, Trucks and semi-trailers=40G(11ms) with 80G with SSD
Crash Hazard	MIL-STD-810F, Method 516.5, Procedure V, Ground equipment=100
Mechanical	
Construction	Aluminum alloy
Mounting	Supports both of wall-mount/VESA-mount
Weight	1.406g
Dimensions	182 x 167.6 x 52 mm

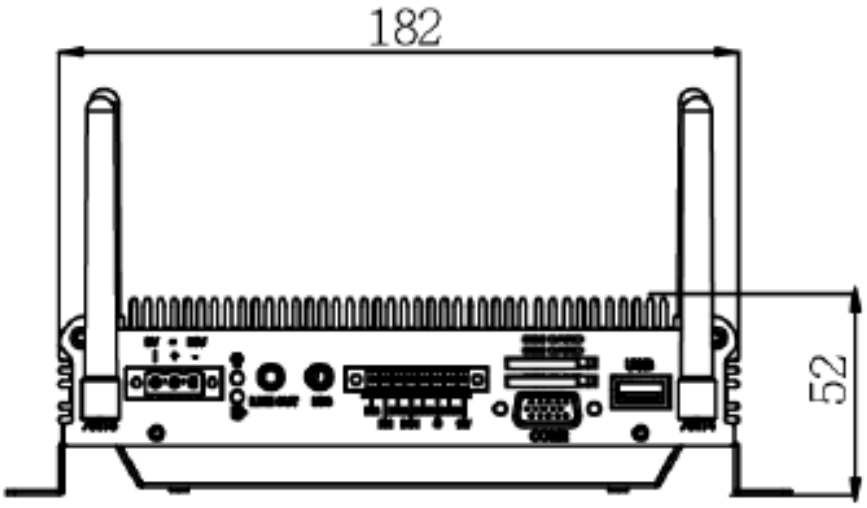
1.2 SD-3110 Illustration (MB, System)

Main Board

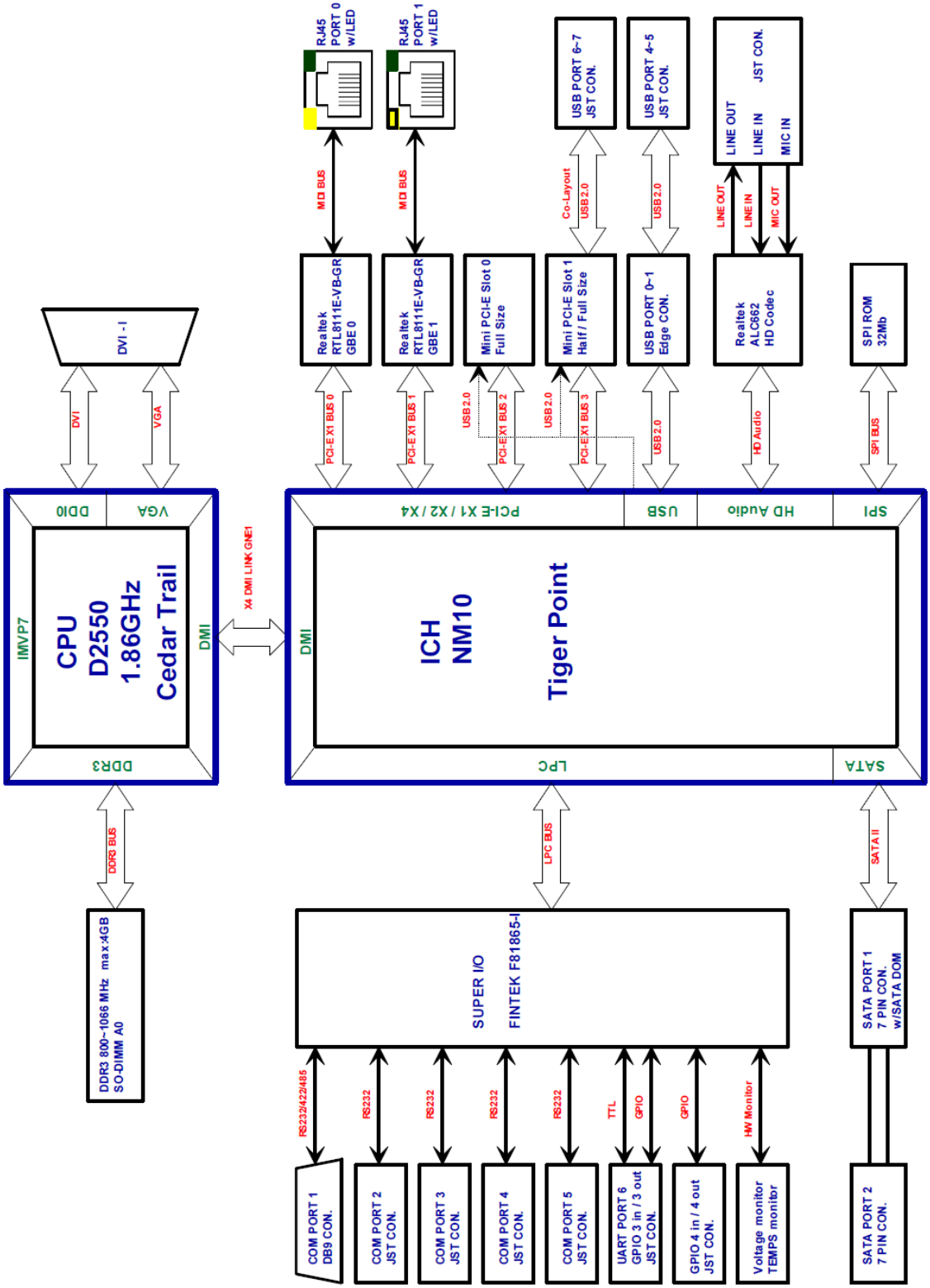


System





1.3 Architecture



1.4 Principal Component Specification

CPU

<table>
<tr><th>Chip</th><th>Description</th></tr>
<tr><td>Intel</td><td>1. Power Consumption:
<table>
<tr><th>Symbol</th><th>Processor Number</th><th>Core Frequency / GHz</th><th>Thermal Design Power</th><th>Unit</th><th>Tj min (°C)</th><th>Tj max (°C)</th><th>Note</th></tr>
<tr><td>TDP</td><td>N2600
N2800
D2500
D2700</td><td>1.86 – 1.6
2.13 – 1.86
2.13 – 1.86
2.4 – 2.13</td><td><=3.5
<=6.5
<=10
<=10</td><td>W
W
W
W</td><td>0</td><td>100
100
100
100</td><td></td></tr>
<tr><td>Symbol</td><td colspan="2">Parameter</td><td>Max</td><td>Unit</td><td></td><td></td><td></td></tr>
<tr><td>AVERAGE</td><td>N2600
N2800</td><td></td><td>~1.25
~1.7</td><td>W
W</td><td>0</td><td>50</td><td></td></tr>
<tr><td>IDLE</td><td colspan="2">D2500
D2700</td><td>TBD
~2.7</td><td>W
W</td><td>0</td><td>50</td><td></td></tr>
</table>
</td></tr>
</table>

South Bridge

Chip	Description
Intel NM10	1. Power Consumption:2.1W

2.0 INTERNAL CONNECTOR SPECIFICATION

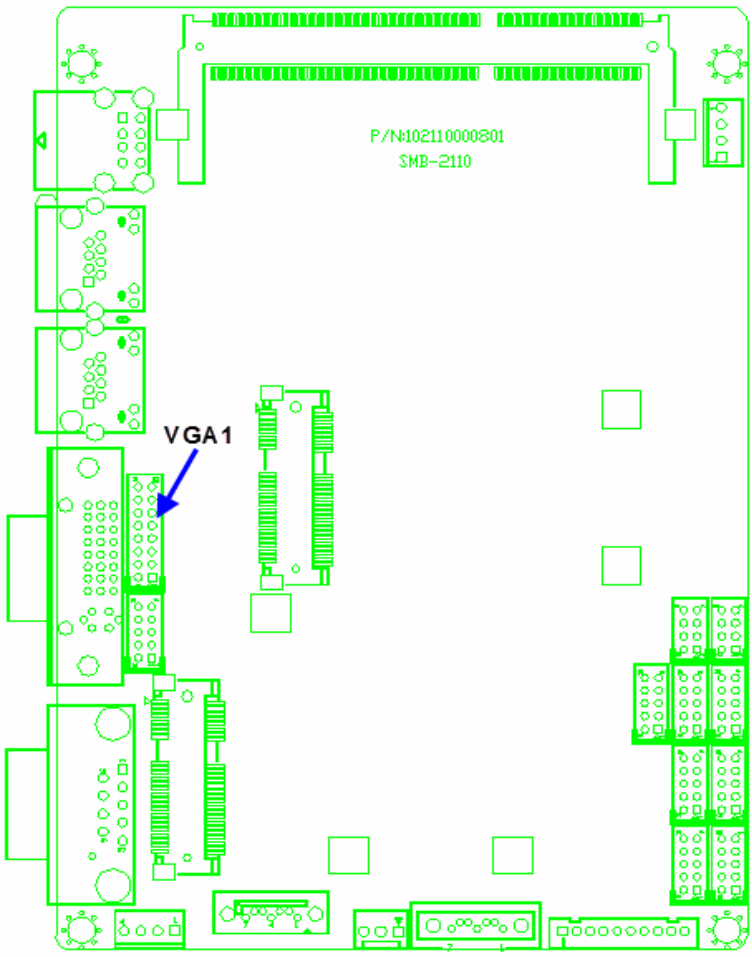
2.0 INTERNAL CONNECTOR SPECIFICATION

2.1 VGA Connector

Connector size	2 X 8 = 16 Pin
Connector type	JST-2.0mm-M-180
Connector location	**VGA1**
Connector pin definition	

Pin	Signal	Pin	Signal
1	RED	2	GREEN
3	BLUE	4	NC
5	CER_DET	6	GND
7	GND	8	GND
9	+5V	10	GND
11	NC	12	DAC_SDA
13	HSYNC	14	VSYNC
15	DAC_SCL	16	NC

Connector map

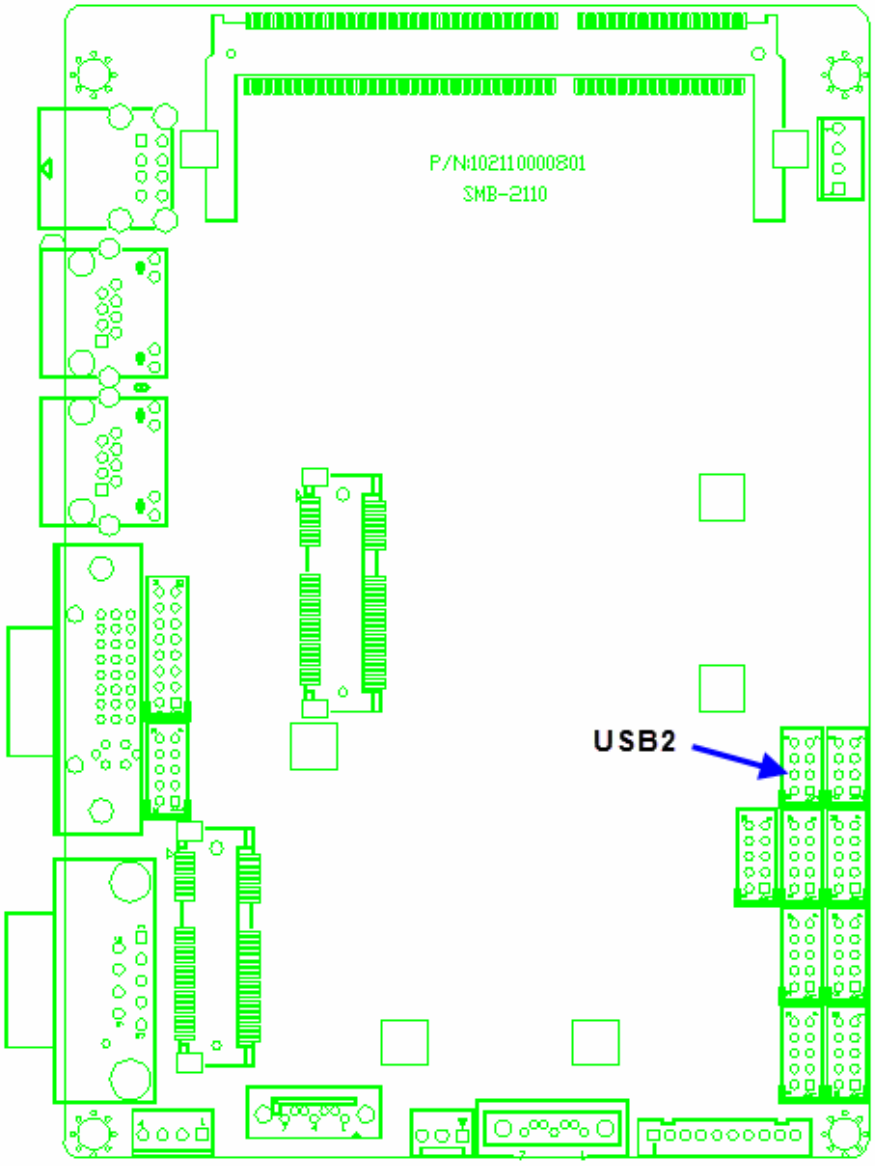


2.2 USB Connector (USB2)

Connector size	2 X 4 = 8 Pin
Connector type	JST-2.0mm-M-180
Connector location	**USB2**
Connector pin definition	

Pin	Signal	Pin	Signal
1	5VSB	2	5VSB
3	USB1_N	4	USB2_N
5	USB1_P	6	USB2_P
7	GND	8	GND

Connector map

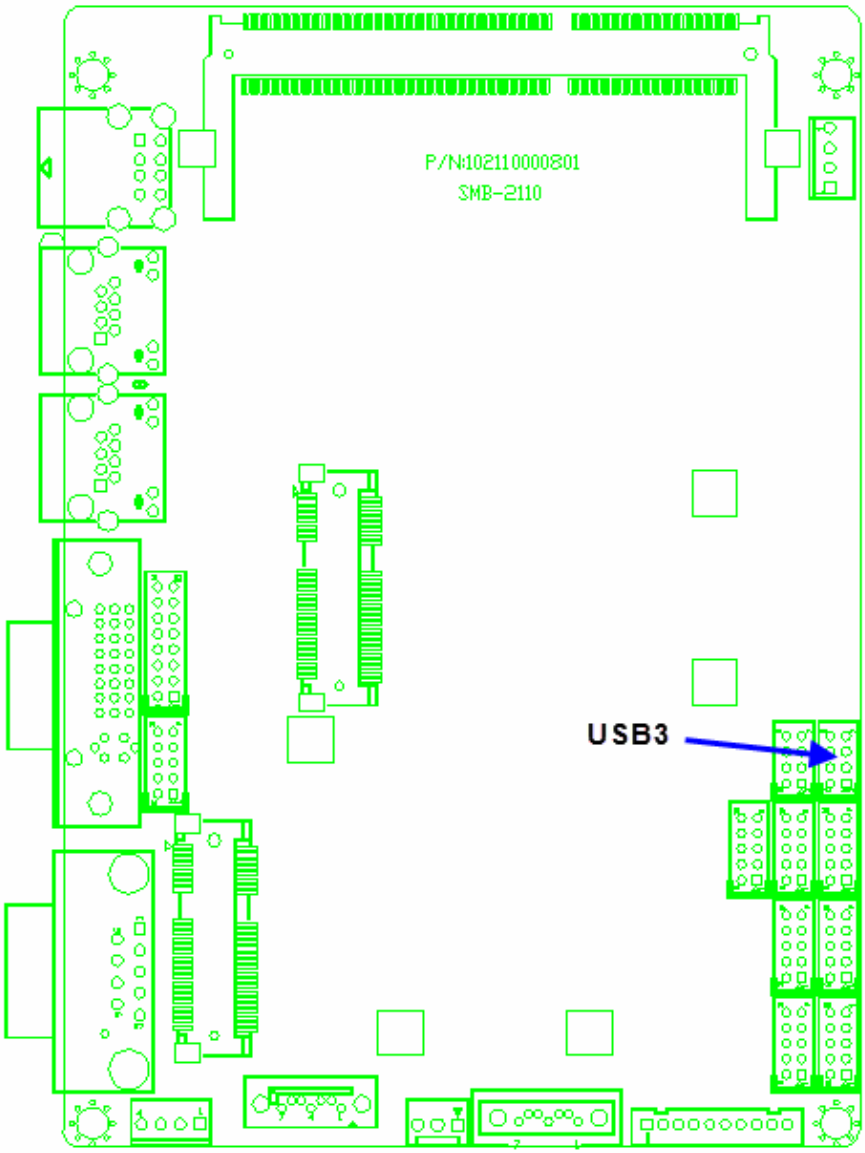


2.3 USB Connector (USB3)

Connector size	2 X 4 = 8 Pin
Connector type	JST-2.0mm-M-180
Connector location	**USB3**
Connector pin definition	

Pin	Signal	Pin	Signal
1	5VSB	2	5VSB
3	USB4_N	4	NC/ USB6_N
5	USB4_P	6	NC/ USB6_P
7	GND	8	GND

Connector map

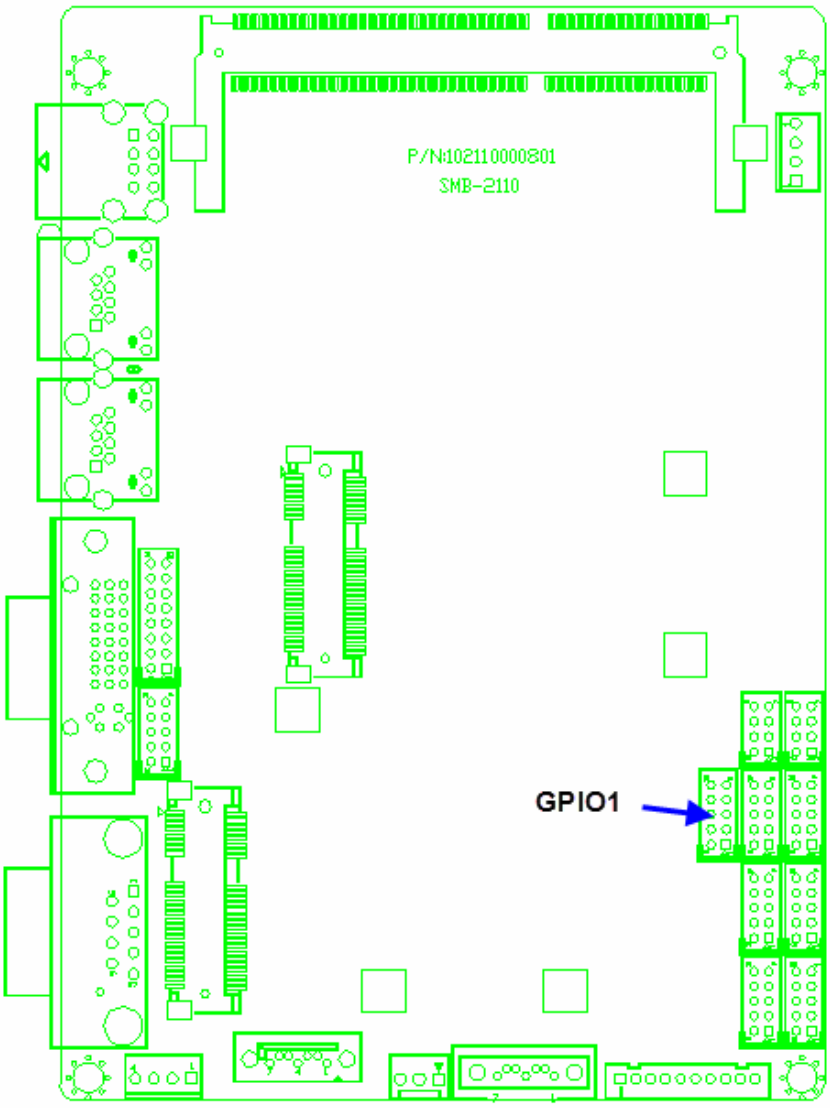


2.4 GPIO Connector

Connector size	2 X 5 = 10 Pin
Connector type	JST-2.0mm-M-180
Connector location	**GPIO1**
Connector pin definition	

Pin	Signal	Pin	Signal
1	GND	2	+5V
3	GPI0	4	GPO0
5	GPI1	6	GPO1
7	GPI2	8	GPO2
9	GPI3	10	GPO3

Connector map

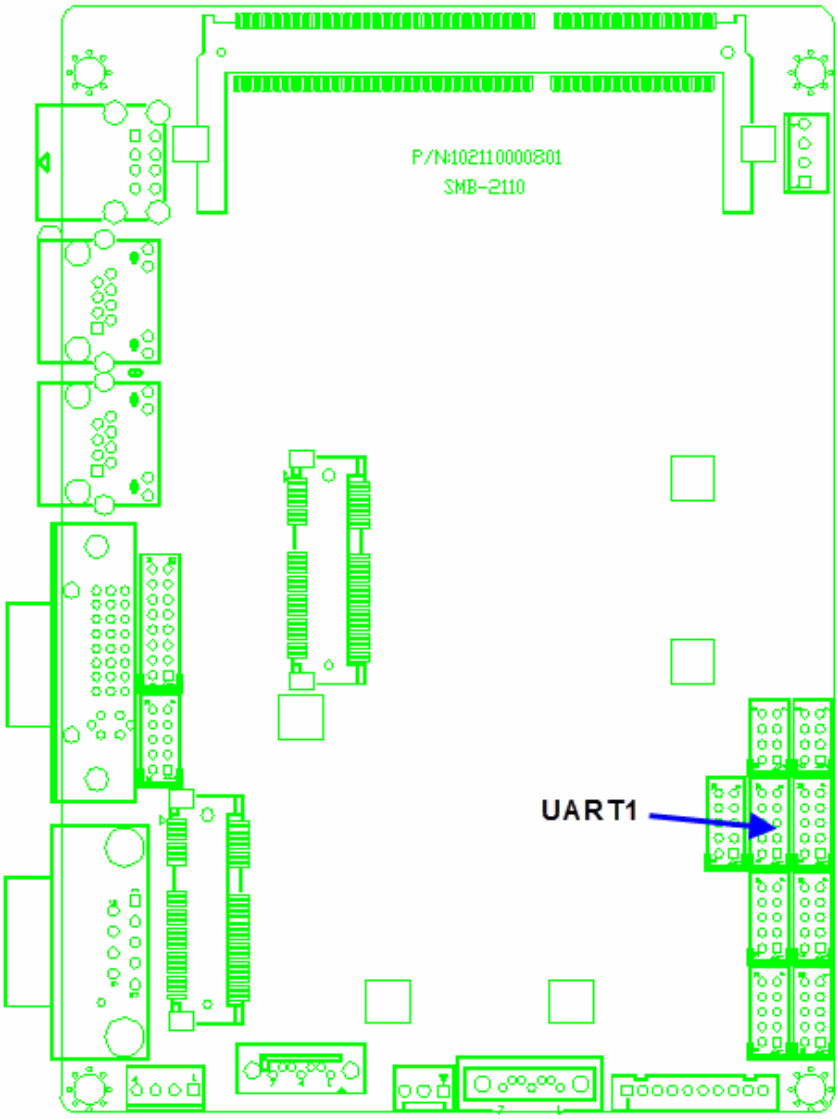


2.5 UART and GPIO Connector

Connector size	2 X 5 = 10 Pin
Connector type	JST-2.0mm-M-180
Connector location	**UART1**
Connector pin definition	

Pin	Signal	Pin	Signal
1	GPIO0	2	COM6_RX
3	COM6_TX	4	GPIO4
5	GND	6	GPIO3
7	GPIO1	8	GND
9	GPIO2	10	+5V

Connector map

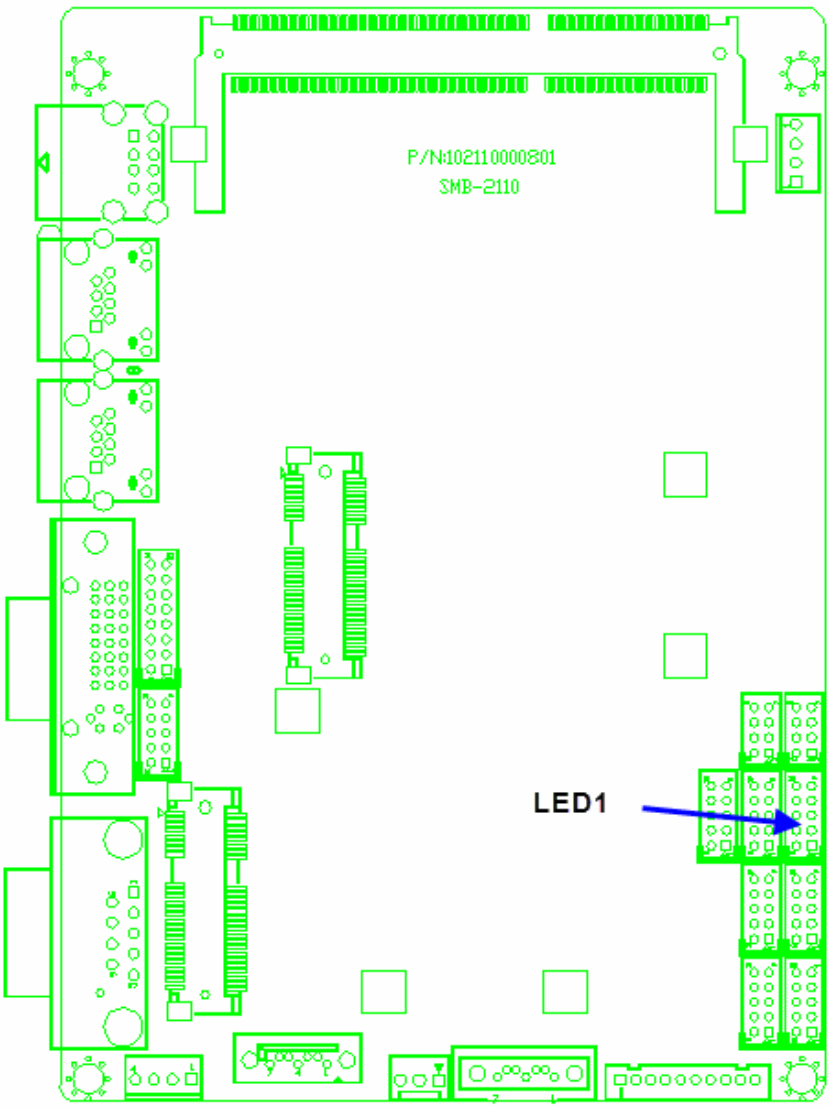


2.6 LED Connector

Connector size	2 X 5 = 10 Pin
Connector type	JST-2.0mm-M-180
Connector location	**LED1**
Connector pin definition	

Pin	Signal	Pin	Signal
1	HDD_LED_N	2	HDD_LED_P
3	PWR_LED_N	4	PWR_LED_P
5	GND	6	PWRBT#
7	GND	8	HW_RESET#
9	GND	10	GND

Connector map

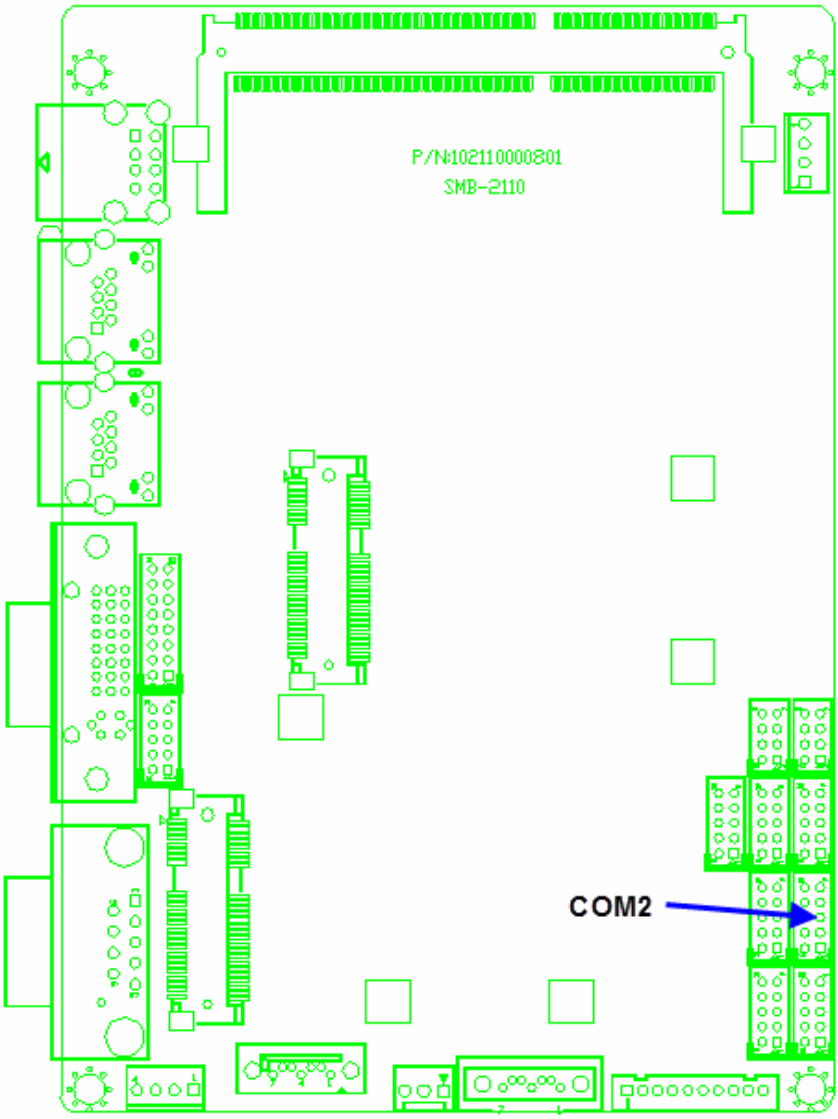


2.7 COM Connector (COM2)

Connector size	2 X 5 = 10 Pin
Connector type	JST-2.0mm-M-180
Connector location	**COM2**
Connector pin definition	

Pin	Signal	Pin	Signal
1	COM2_DCD	2	COM2_RXD
3	COM2_TXD	4	COM2_DTR
5	GND	6	COM2_DSR
7	COM2_RTS	8	COM2_CTS
9	COM2_RI	10	GND

Connector map

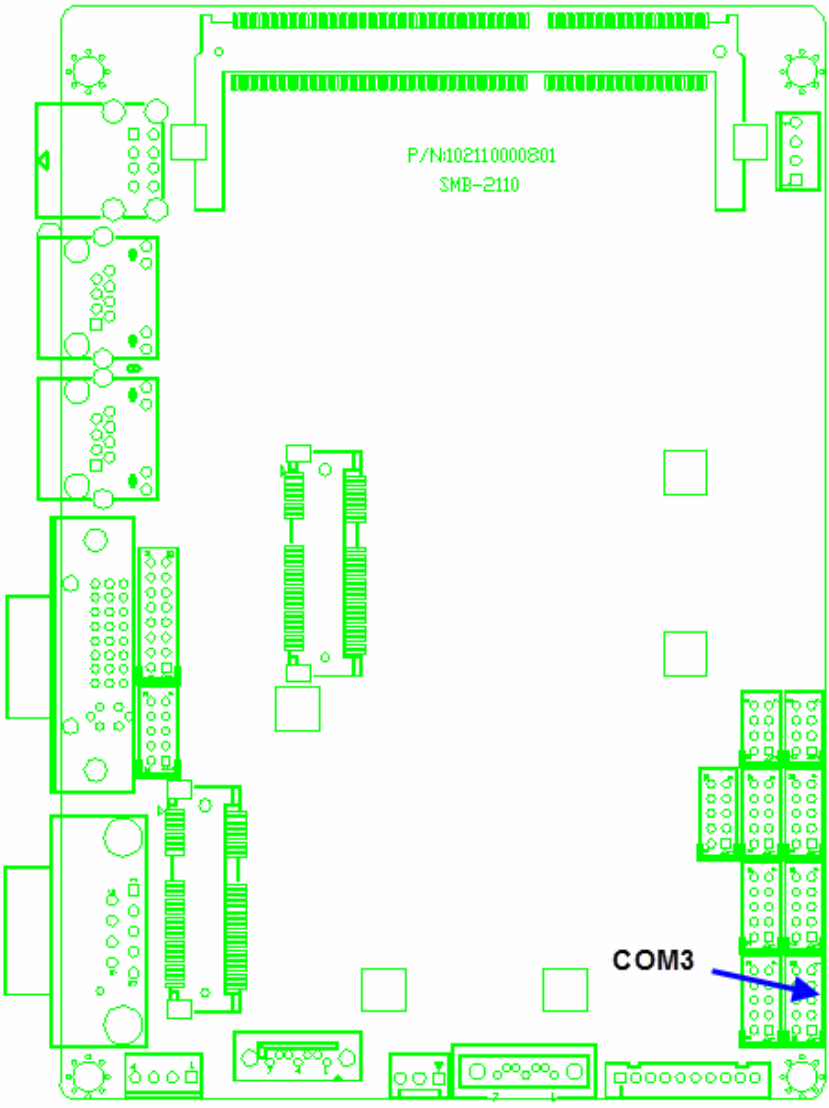


2.8 COM Connector (COM3)

Connector size	2 X 5 = 10 Pin
Connector type	JST-2.0mm-M-180
Connector location	**COM3**
Connector pin definition	

Pin	Signal	Pin	Signal
1	COM3_DCD	2	COM3_RXD
3	COM3_TXD	4	COM3_DTR
5	GND	6	COM3_DSR
7	COM3_RTS	8	COM3_CTS
9	COM3_RI	10	GND

Connector map

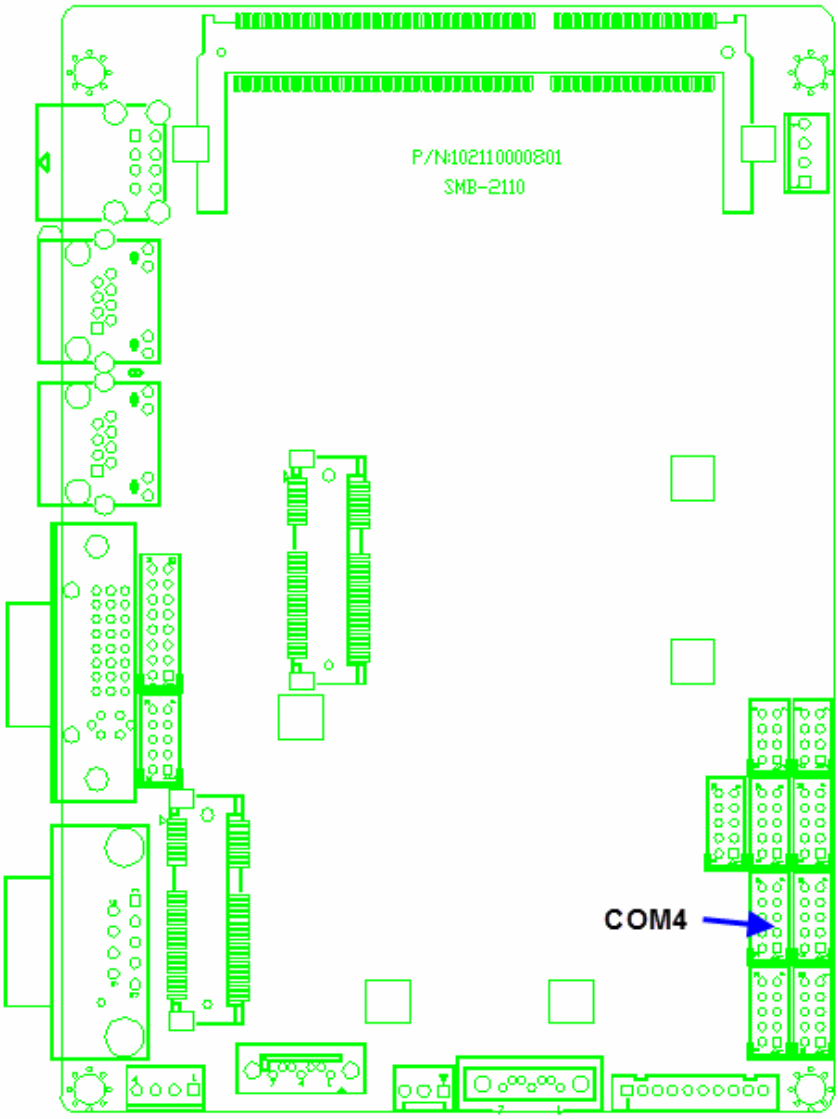


2.9 COM Connector (COM4)

Connector size	2 X 5 = 10 Pin
Connector type	JST-2.0mm-M-180
Connector location	**COM4**
Connector pin definition	

Pin	Signal	Pin	Signal
1	COM4_DCD	2	COM4_RXD
3	COM4_TXD	4	COM4_DTR
5	GND	6	COM4_DSR
7	COM4_RTS	8	COM4_CTS
9	COM4_RI	10	GND

Connector map

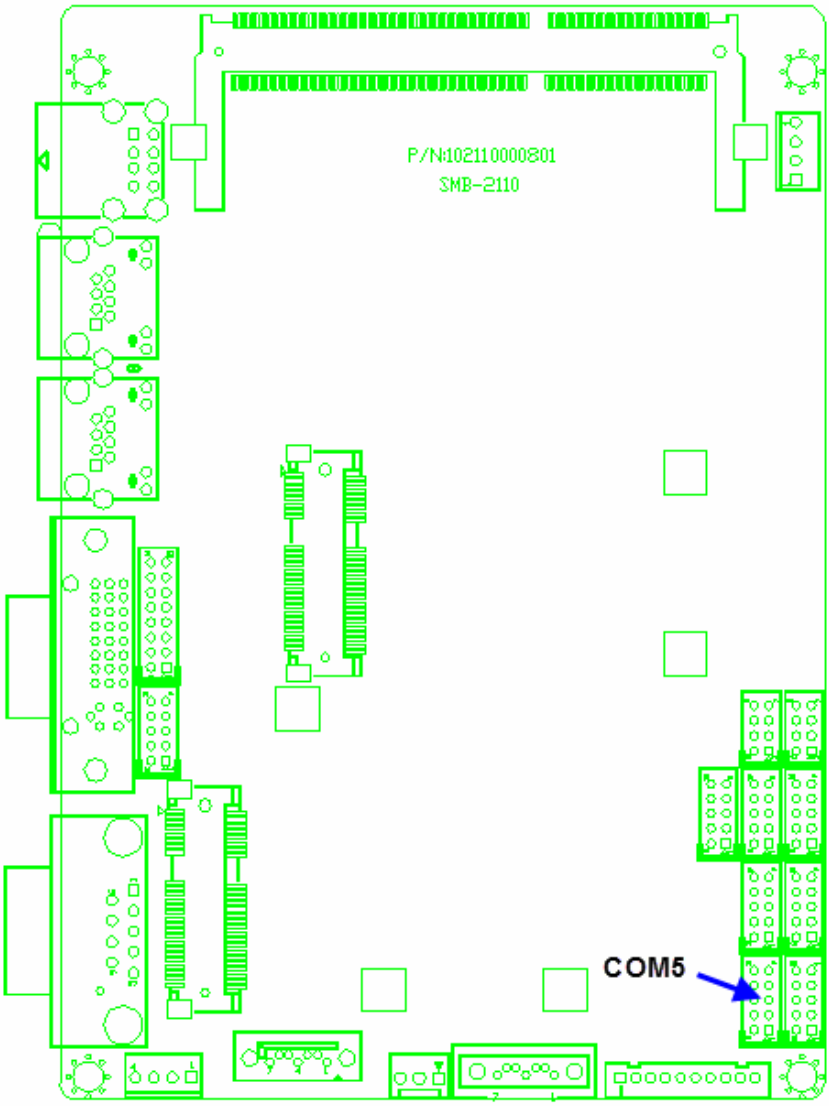


2.10 COM Connector (COM5)

Connector size	2 X 5 = 10 Pin
Connector type	JST-2.0mm-M-180
Connector location	**COM5**
Connector pin definition	

Pin	Signal	Pin	Signal
1	COM5_DCD	2	COM5_RXD
3	COM5_TXD	4	COM5_DTR
5	GND	6	COM5_DSR
7	COM5_RTS	8	COM5_CTS
9	COM5_RI	10	GND

Connector map

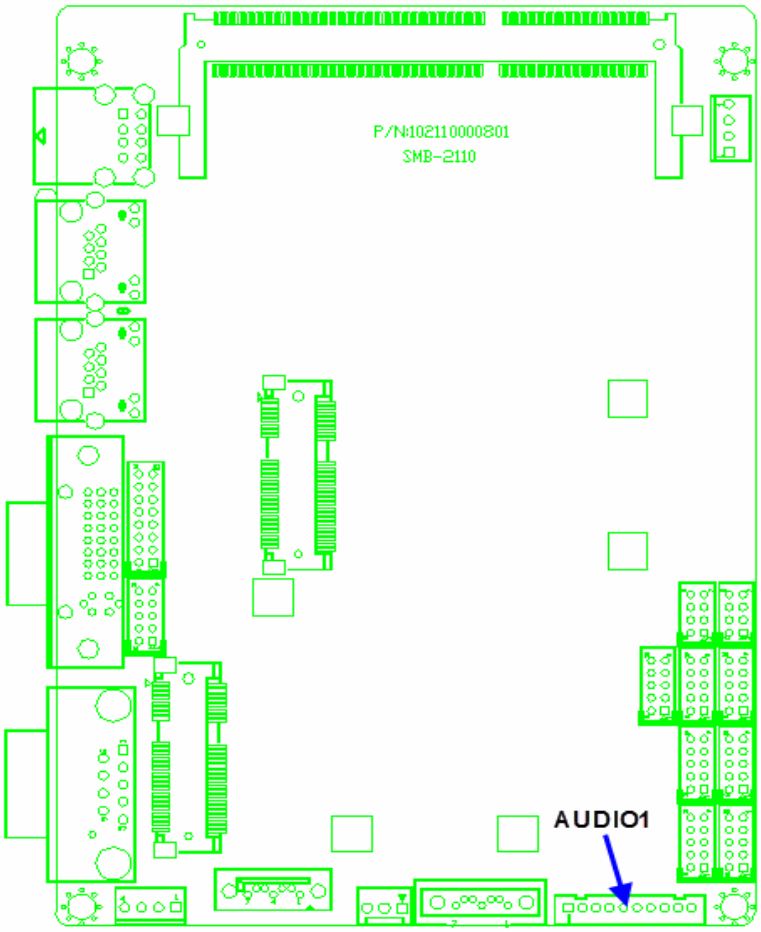


2.11 AUDIO Connector

Connector size	1 X 10 = 10 Pin
Connector type	JST-2.0mm-M-180
Connector location	**AUDIO1**
Connector pin definition	

Pin	Signal
1	FRONT_OUT_L
2	FRONT_OUT_R
3	FRONT-JD
4	LINE_IN_L
5	LINE_IN _R
6	LINE-JD
7	MIC_IN_ L
8	MIC_IN_R
9	MIC-JD
10	GND

Connector map

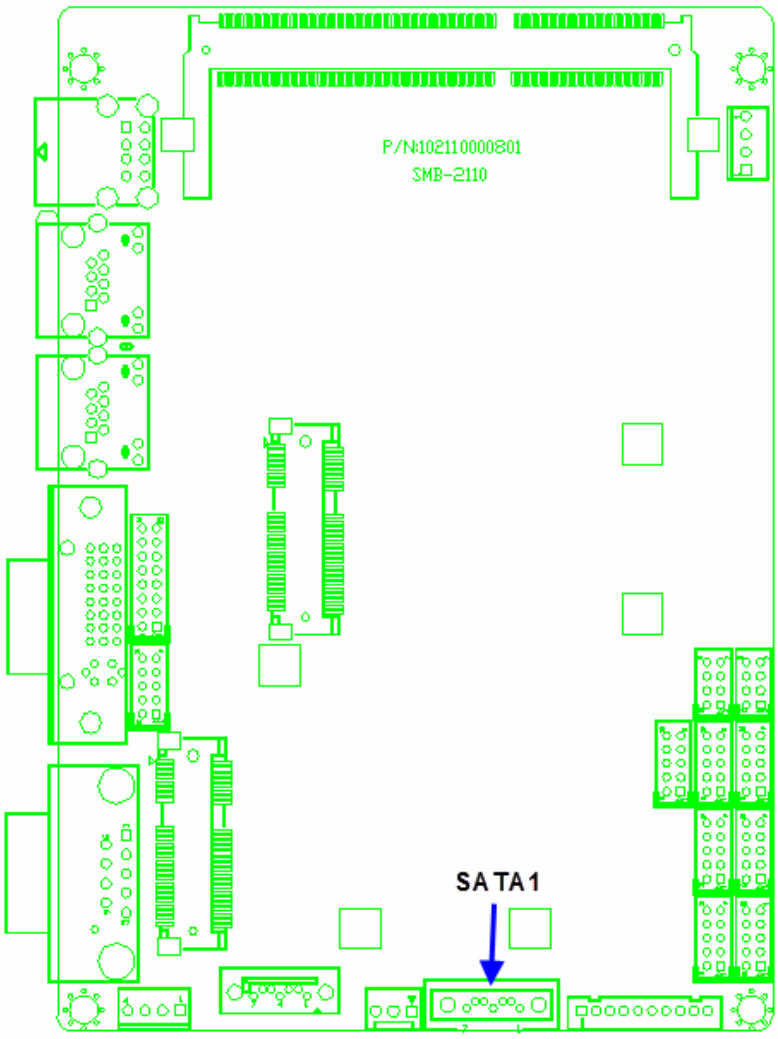


2.12 SATA Connector (SATA1)

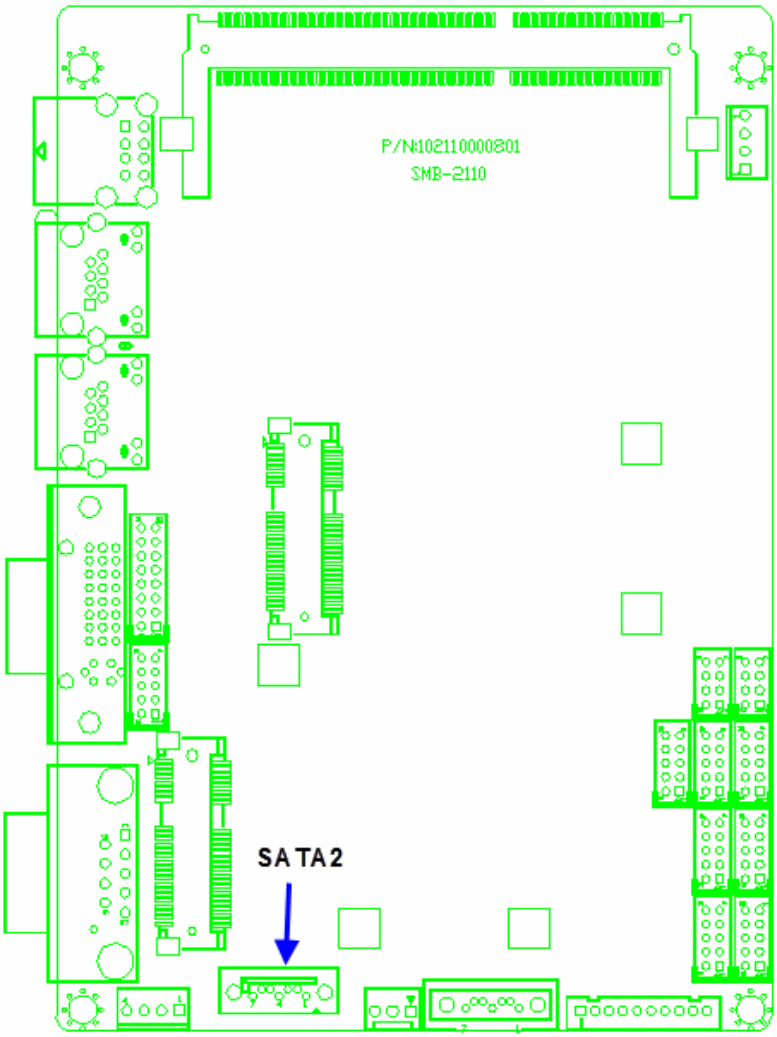
Connector size	1 X 7 = 7 Pin
Connector type	SATA 1.27mm-M-180D
Connector location	**SATA1**
Connector pin definition	

Pin	Signal
1	GND
2	SATA_TXP0
3	SATA_TXN0
4	GND
5	SATA_RXN0
6	SATA_RXP0
7	GND

Connector map



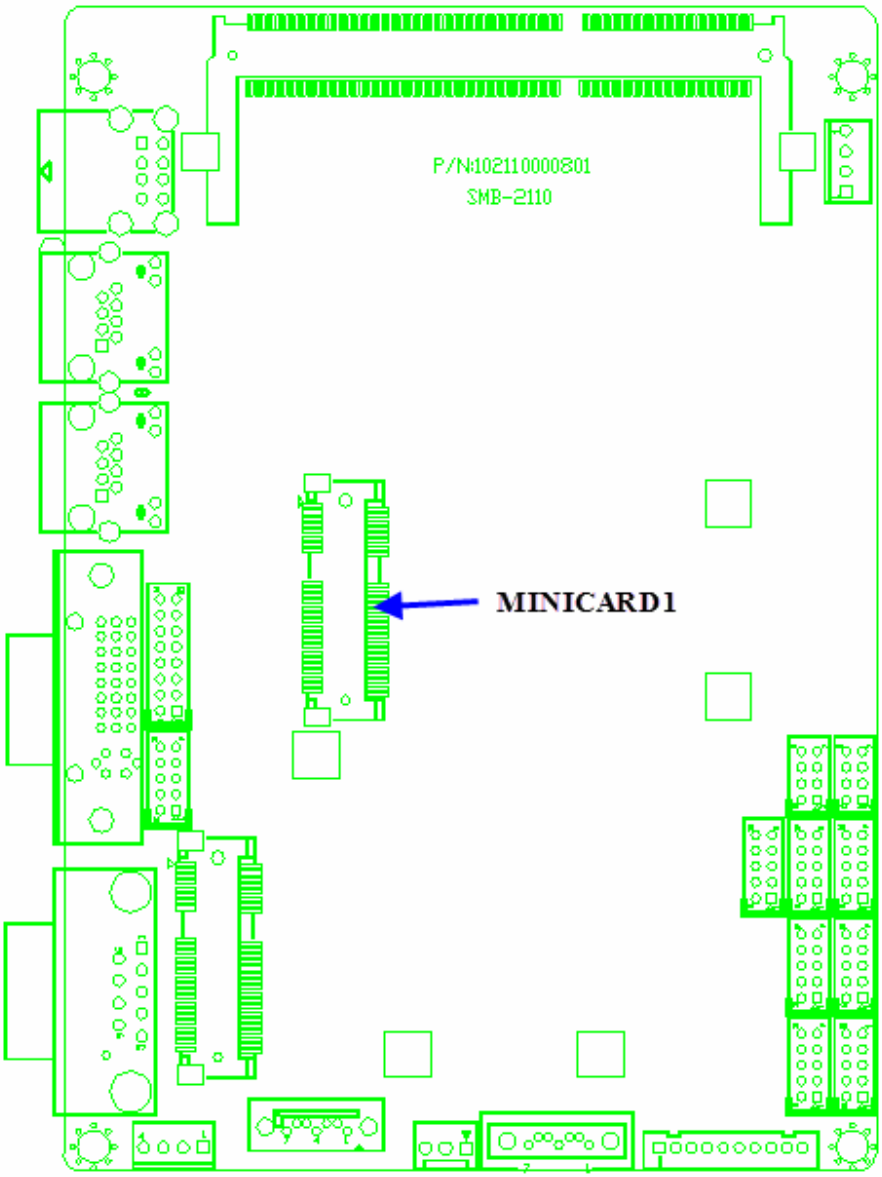
2.13 SATA Connector (SATA2)

<table>
<tr><td>Connector size</td><td>1 X 7 = 7 Pin</td></tr>
<tr><td>Connector type</td><td>SATA 1.27mm-M-180D</td></tr>
<tr><td>Connector location</td><td>SATA2</td></tr>
<tr><td>Connector pin definition</td><td>
<table>
<tr><th>Pin</th><th>Signal</th></tr>
<tr><td>1</td><td>GND</td></tr>
<tr><td>2</td><td>SATA_TXP1</td></tr>
<tr><td>3</td><td>SATA_TXN1</td></tr>
<tr><td>4</td><td>GND</td></tr>
<tr><td>5</td><td>SATA_RXN1</td></tr>
<tr><td>6</td><td>SATA_RXP1</td></tr>
<tr><td>7</td><td>GND</td></tr>
</table>
</td></tr>
<tr><td>Connector map</td><td> 
</td></tr>
</table>

2.14 Mini PCI-E Connector (MINICARD1)

Connector size	2 X 26 = 52 Pin
Connector type	MINI PCI-E CON 9.2mmH
Connector location	**MINICARD1**
Connector pin definition	

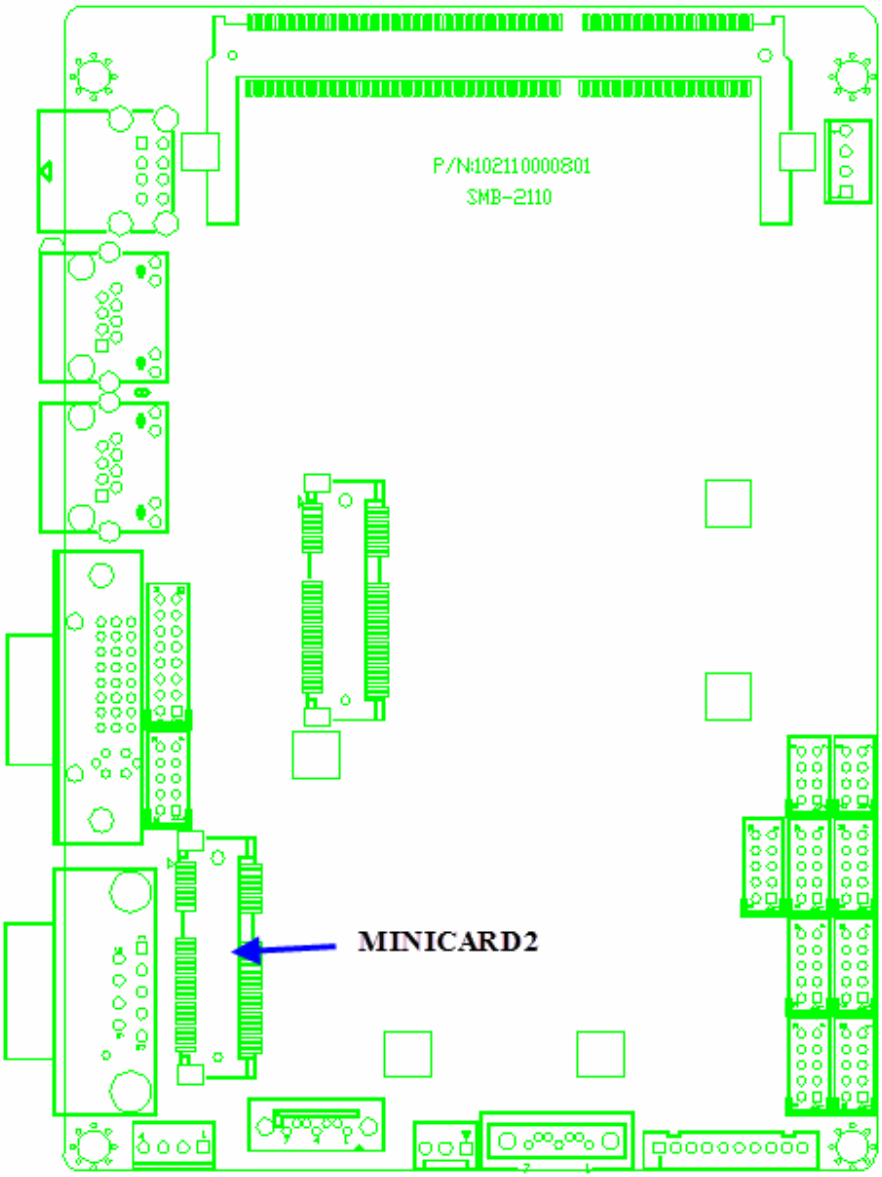
Pin	Signal	Pin	Signal
1	PCIE_WAKE#	2	3VSB
3	NC	4	GND
5	NC	6	+1.5V
7	MINICARD0_CLKREQ#	8	NC
9	GND	10	NC
11	PCIE_MCARD0_CLK_N	12	NC
13	PCIE_MCARD0_CLK_P	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	MINICARD0_DIS#
21	GND	22	PCIE_RST#
23	PCIE_MCARD0_RX_N	24	3VSB
25	PCIE_MCARD0_RX_P	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PCIE_MCARD0_TX_N	32	SMB_DATA
33	PCIE_MCARD0_TX_P	34	GND
35	GND	36	USB_6N
37	GND	38	USB_6P
39	3VSB	40	GND
41	3VSB	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	NC	52	3VSB

Connector map	

2.15 Mini PCI-E Connector (MINICARD2)

Connector size	2 X 26 = 52 Pin
Connector type	MINI PCI-E CON 9.2mmH
Connector location	**MINICARD2**
Connector pin definition	

Pin	Signal	Pin	Signal
1	PCIE_WAKE#	2	3VSB
3	NC	4	GND
5	NC	6	+1.5V
7	MINICARD1_CLKREQ#	8	NC
9	GND	10	NC
11	PCIE_MCARD1_CLK_N	12	NC
13	PCIE_MCARD1_CLK_P	14	NC
15	GND	16	NC
17	NC	18	GND
19	NC	20	MINICARD1_DIS#
21	GND	22	PCIE_RST#
23	PCIE_MCARD1_RX_N	24	3VSB
25	PCIE_MCARD1_RX_P	26	GND
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PCIE_MCARD1_TX_N	32	SMB_DATA
33	PCIE_MCARD1_TX_P	34	GND
35	GND	36	USB_5N
37	GND	38	USB_5P
39	3VSB	40	GND
41	3VSB	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	NC	52	3VSB

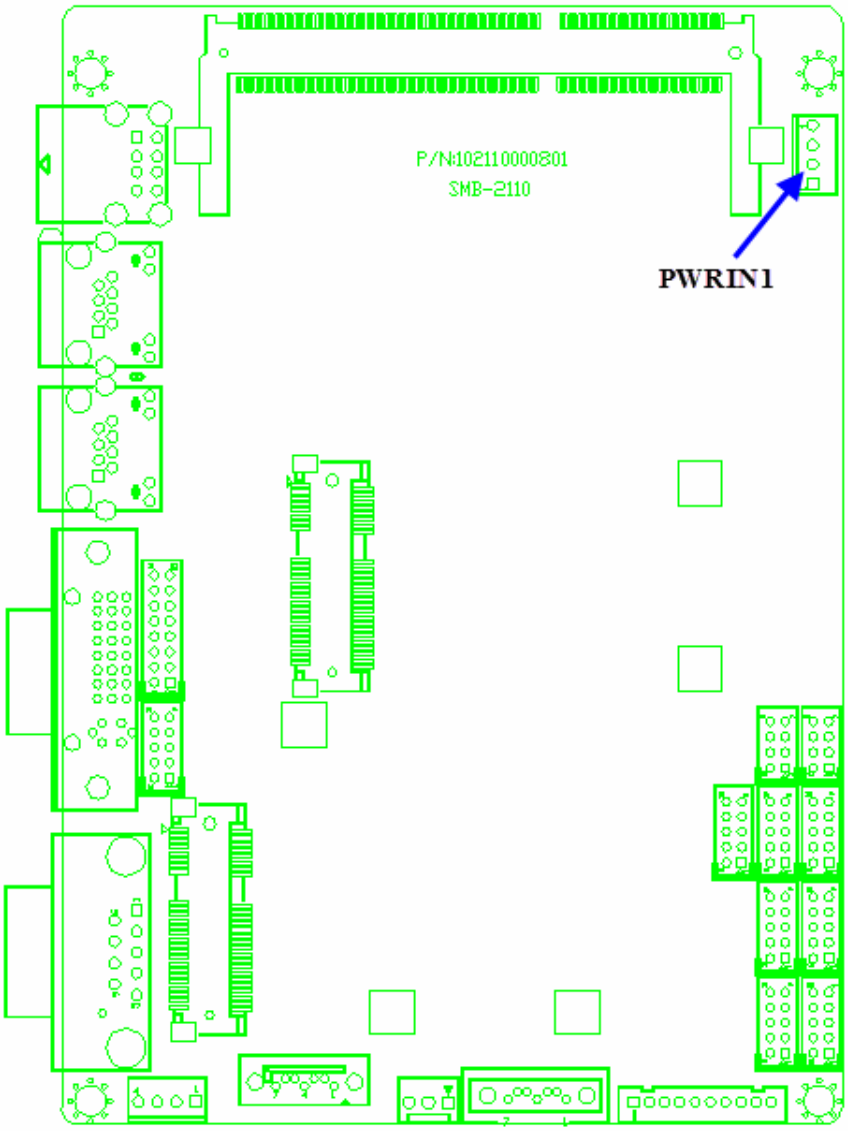
Connector map	

2.16 Power Input Connector

Connector size	1 X 4 = 4 Pin
Connector type	WAFER 2.54mm-M-180
Connector location	**PWRIN1**
Connector pin definition	

Pin	Signal
1	+12VSB
2	+12VSB
3	GND
4	GND

Connector map

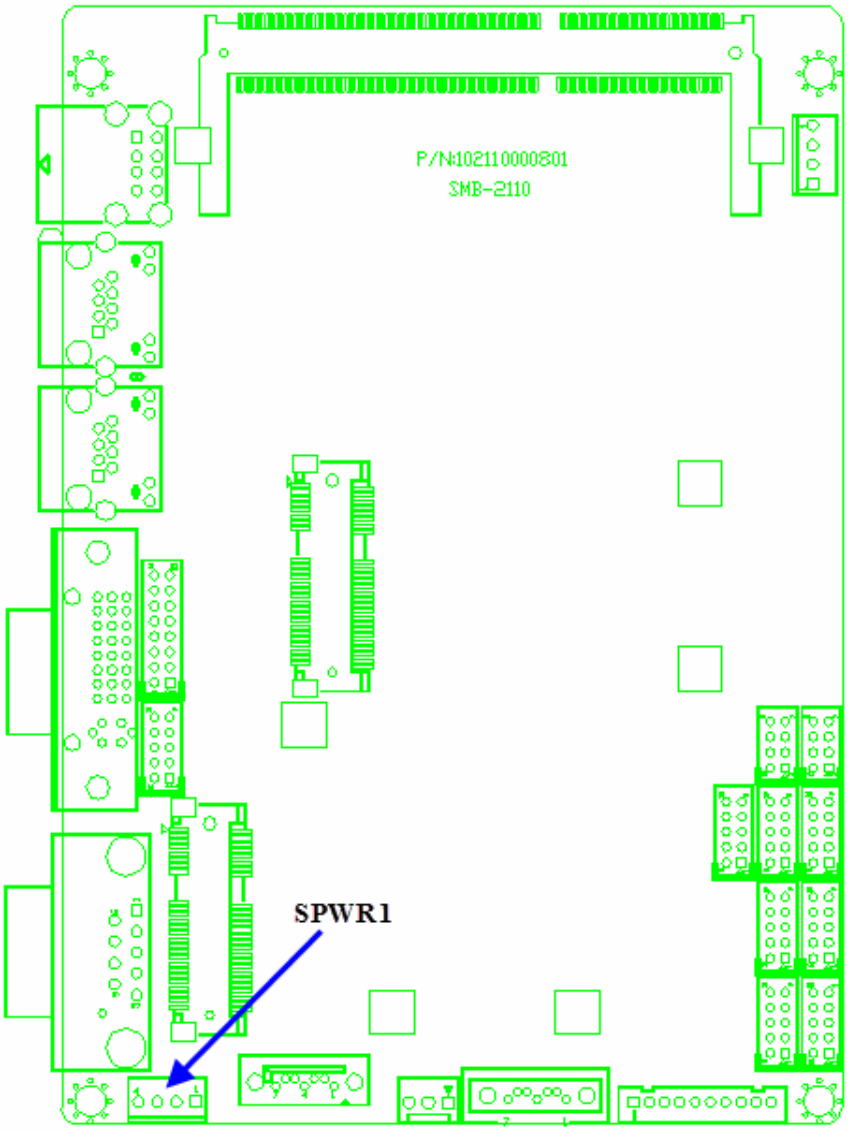


2.17 SATA Power Connector (SPWR1)

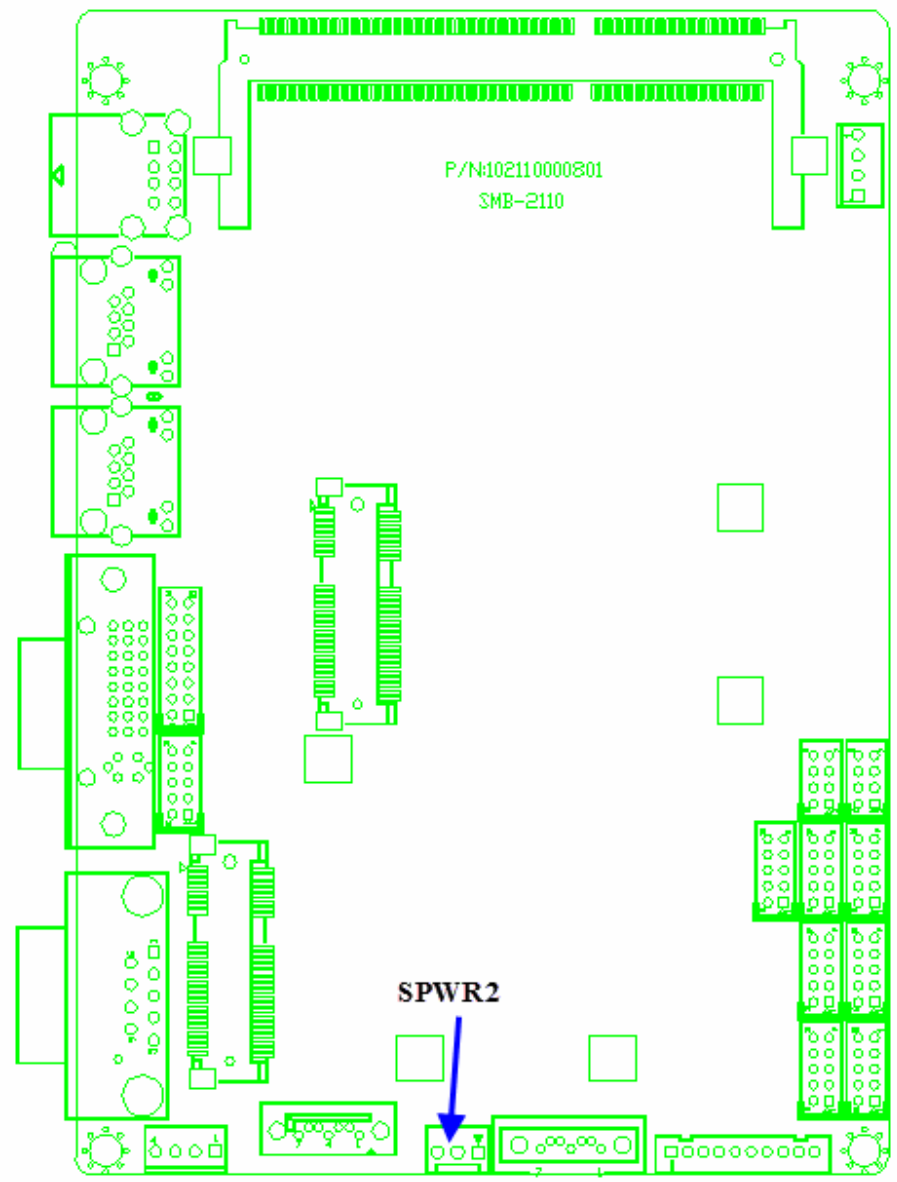
Connector size	1 X 4 = 4 Pin
Connector type	WAFER 2.54mm-M-180
Connector location	**SPWR1**
Connector pin definition	

Pin	Signal
1	+5V
2	GND
3	GND
4	+12V

Connector map



2.18 SATA Power Connector (SPWR2)

<table>
<tr><td>Connector size</td><td>1 X 3 = 3 Pin</td></tr>
<tr><td>Connector type</td><td>WAFER 2.54mm-M-180</td></tr>
<tr><td>Connector location</td><td>SPWR2</td></tr>
<tr><td>Connector pin definition</td><td>
<table>
<tr><th>Pin</th><th>Signal</th></tr>
<tr><td>1</td><td>+12V</td></tr>
<tr><td>2</td><td>+5V</td></tr>
<tr><td>3</td><td>GND</td></tr>
</table>
</td></tr>
<tr><td>Connector map</td><td> 
</td></tr>
</table>

3.0 EXTERNAL CONNECTOR SPECIFICATION

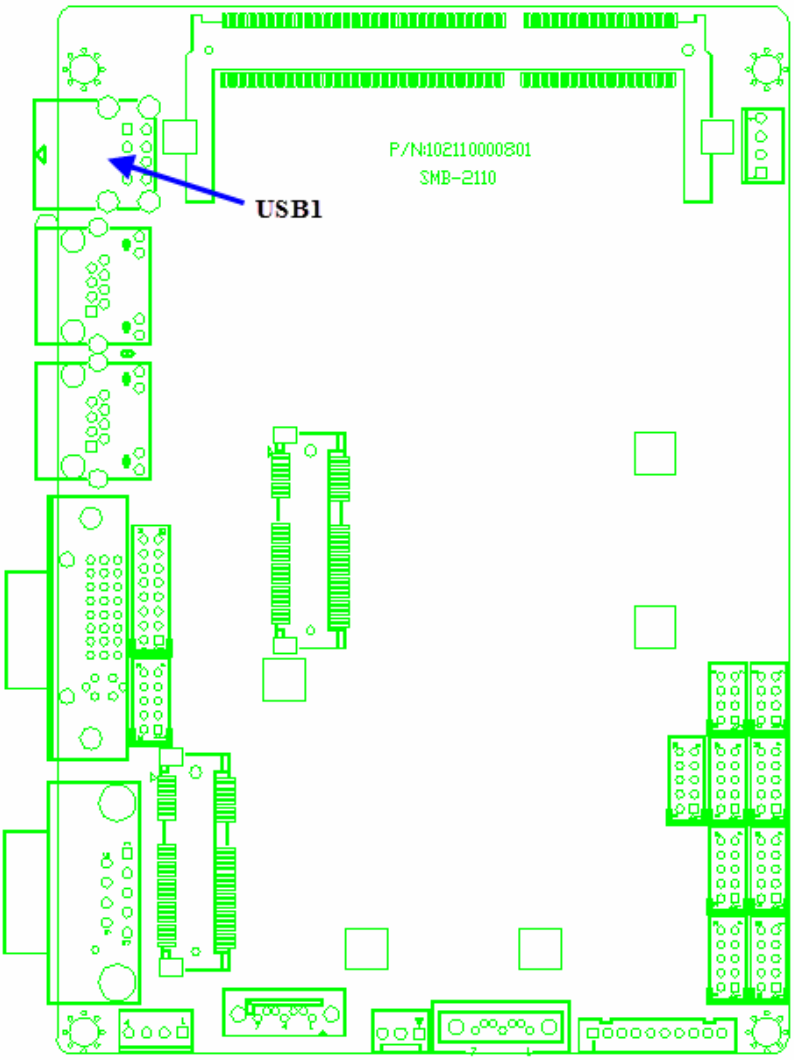
3.0 EXTERNAL CONNECTOR SPECIFICATION

3.1 USB Connector

Connector size	8 Pin
Connector type	Type A
Connector location	**USB1**
Connector pin definition	

Pin	Signal	Pin	Signal
1	5VSB	2	USB7_N
3	USB7_P	4	GND
5	5VSB	6	USB0_N
7	USB0_P	8	GND

Connector map

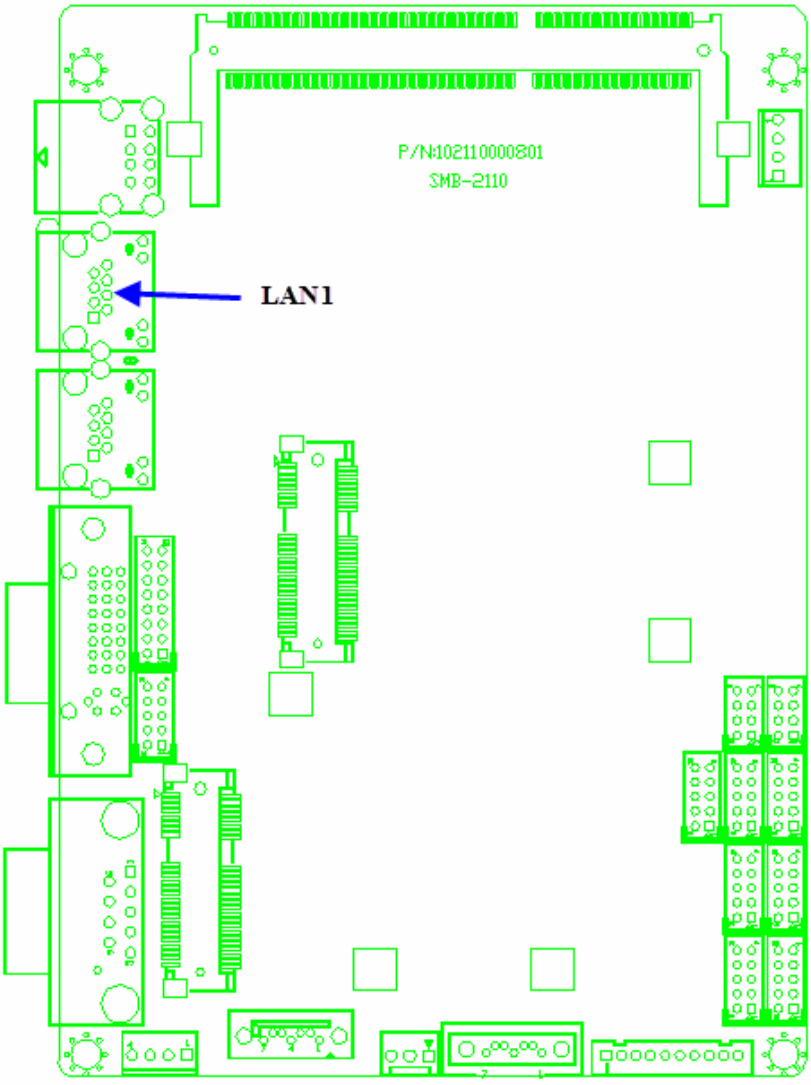


3.2 LAN Connector (LAN1)

Connector size	12 Pin
Connector type	RJ45+LED
Connector location	**LAN1**
Connector pin definition	

Pin	Signal	Pin	Signal
1	LAN0_MDI0P	2	LAN0_MDI0N
3	LAN0_MDI1P	4	LAN0_MDI2P
5	LAN0_MDI2N	6	LAN0_MDI1N
7	LAN0_MDI3P	8	LAN0_MDI3N
9	LAN0_ACT#	10	LAN0_ACTPW
11	LAN0_LINK#	12	LAN0_LINKPW

Connector map



3.3 LAN Connector (LAN2)

<table>
<tr><td>Connector size</td><td>12 Pin</td></tr>
<tr><td>Connector type</td><td>RJ45+LED</td></tr>
<tr><td>Connector location</td><td>LAN2</td></tr>
<tr><td>Connector pin definition</td><td>
<table>
<tr><th>Pin</th><th>Signal</th><th>Pin</th><th>Signal</th></tr>
<tr><td>1</td><td>LAN1_MDI0P</td><td>2</td><td>LAN1_MDI0N</td></tr>
<tr><td>3</td><td>LAN1_MDI1P</td><td>4</td><td>LAN1_MDI2P</td></tr>
<tr><td>5</td><td>LAN1_MDI2N</td><td>6</td><td>LAN1_MDI1N</td></tr>
<tr><td>7</td><td>LAN1_MDI3P</td><td>8</td><td>LAN1_MDI3N</td></tr>
<tr><td>9</td><td>LAN1_ACT#</td><td>10</td><td>LAN1_ACTPW</td></tr>
<tr><td>11</td><td>LAN1_LINK#</td><td>12</td><td>LAN1_LINKPW</td></tr>
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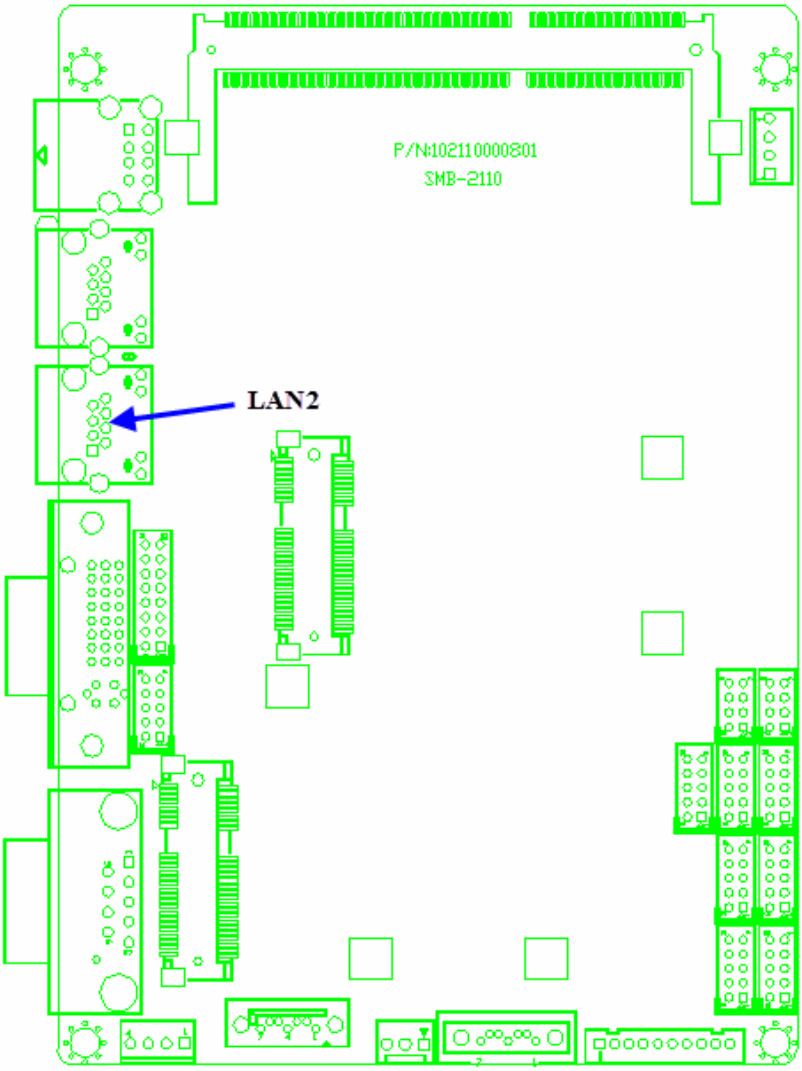
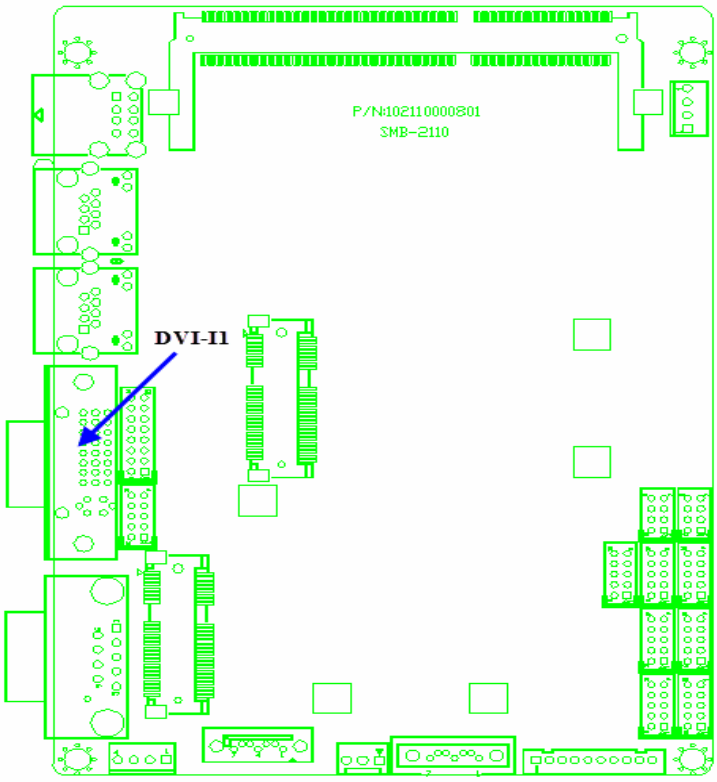
</td></tr>
<tr><td>Connector map</td><td> 
</td></tr>
</table>

3.4 DVI-I Connector

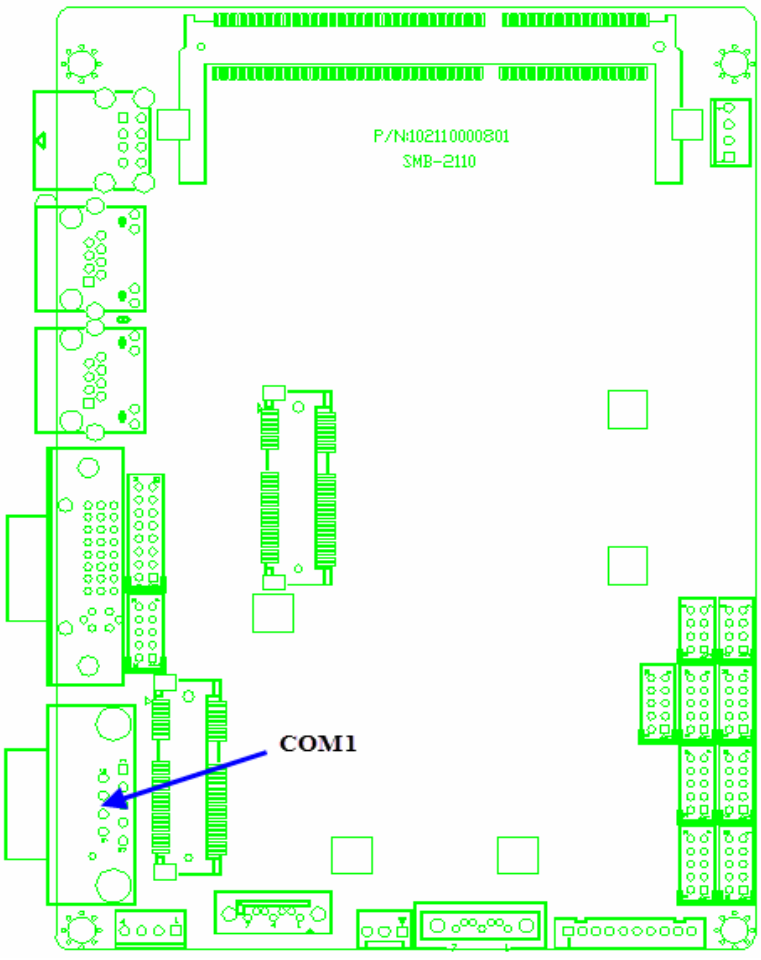
Connector size	50 Pin
Connector type	DVI-I
Connector location	**DVI-I1**
Connector pin definition	

Pin	Signal	Pin	Signal
1	DVI_TX2_N	2	DVI_TX2_P
3	GND	4	5VSB
5	+12V	6	DVI_DDC_CLK
7	DVI_DDC_DATA	8	CRT_VSYNC
9	DVI_TX1_N	10	DVI_TX1_P
11	GND	12	USB_3N
13	USB_3P	14	+5V_DVI_PWR
15	GND	16	DVI_HPD
17	DVI_TX0_N	18	DVI_TX0_P
19	GND	20	CRT_DAC_SDA
21	CRT_DAC_SCL	22	NC
23	DVI_CLK_P	24	DVI_CLK_N
C1	CRT_RED	C2	CRT_GREEN
C3	CRT_BLUE	C4	CRT_HSYNC
C5	CRT_DET	C6	GND

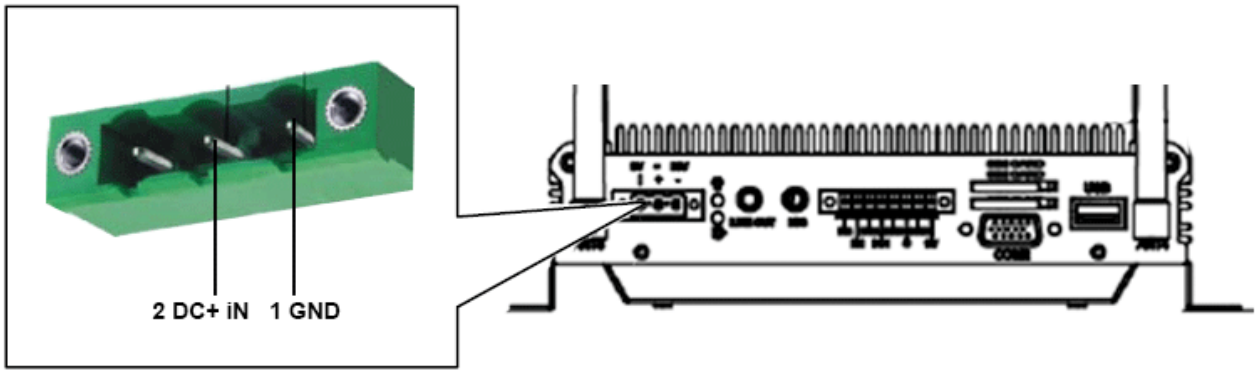
Connector map



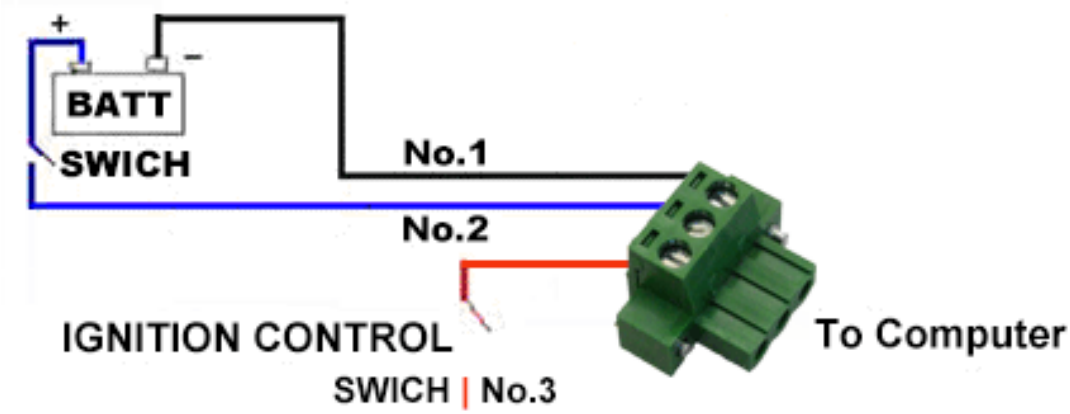
3.5 COM Connector

<table>
<tr><td>Connector size</td><td>9 Pin</td></tr>
<tr><td>Connector type</td><td>DB9</td></tr>
<tr><td>Connector location</td><td>COM1</td></tr>
<tr><td>Connector pin definition</td><td>
<table>
<tr><th>Pin</th><th colspan="3">Signal</th></tr>
<tr><td></td><td>RS232</td><td>RS422</td><td>RS485</td></tr>
<tr><td>1</td><td>COM1_DCD</td><td>TXD-</td><td>TXD-/RXD-</td></tr>
<tr><td>2</td><td>COM1_RXD</td><td>TXD+</td><td>TXD+/RXD+</td></tr>
<tr><td>3</td><td>COM1_TXD</td><td>RXD+</td><td>NC</td></tr>
<tr><td>4</td><td>COM1_DTR</td><td>RXD-</td><td>NC</td></tr>
<tr><td>5</td><td>GND</td><td>GND</td><td>GND</td></tr>
<tr><td>6</td><td>COM1_DSR</td><td>NC</td><td>NC</td></tr>
<tr><td>7</td><td>COM1_RTS</td><td>NC</td><td>NC</td></tr>
<tr><td>8</td><td>COM1_CTS</td><td>NC</td><td>NC</td></tr>
<tr><td>9</td><td>COM1_RI</td><td>NC</td><td>NC</td></tr>
</table>
</td></tr>
<tr><td>Connector map</td><td> 
</td></tr>
</table>

3.6 Power Input Connector



SD-3110's Power Wiring Diagram



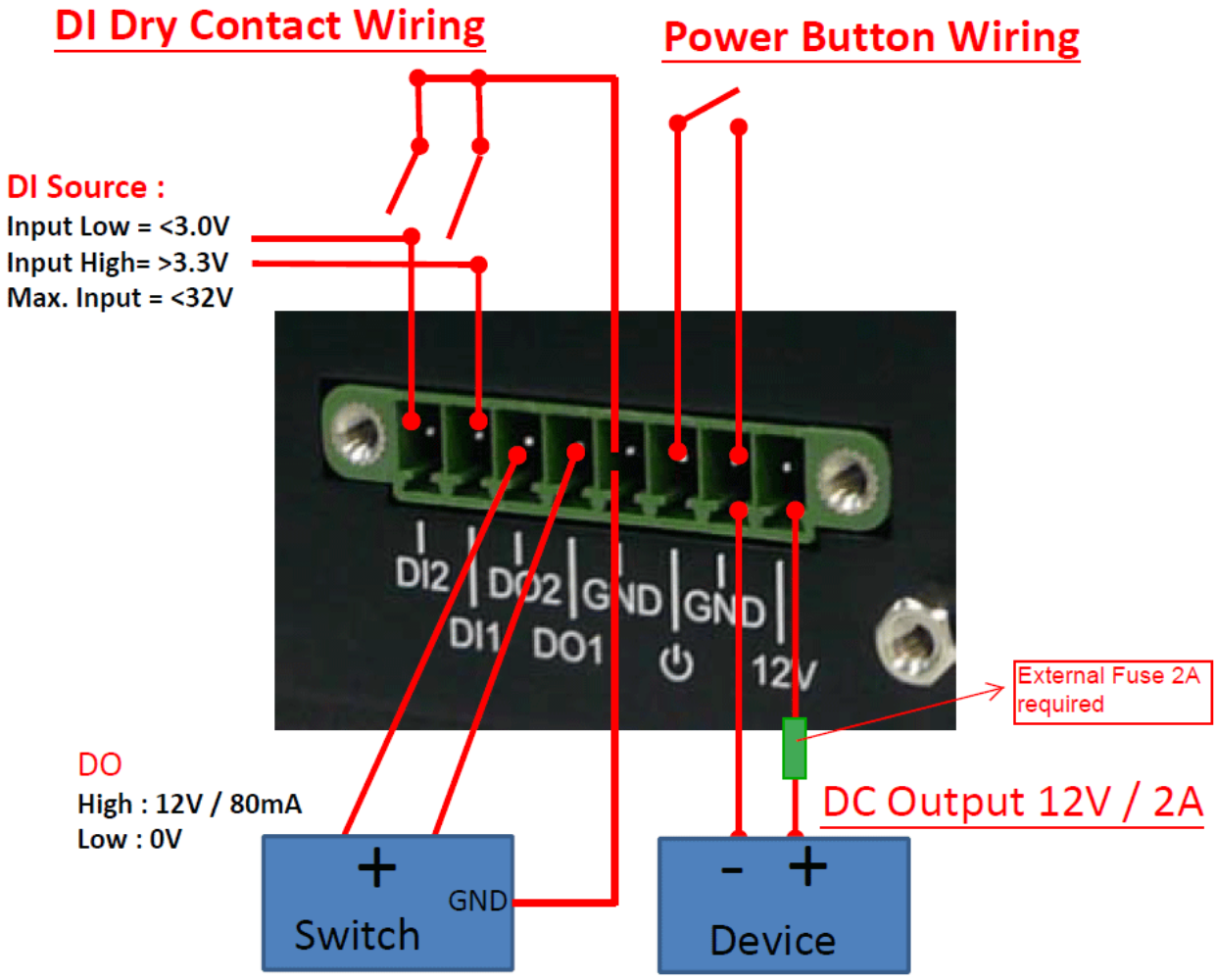
Computer connector :

pin1-Ground

pin2-DC+ 9~32V

pin3-Ignition

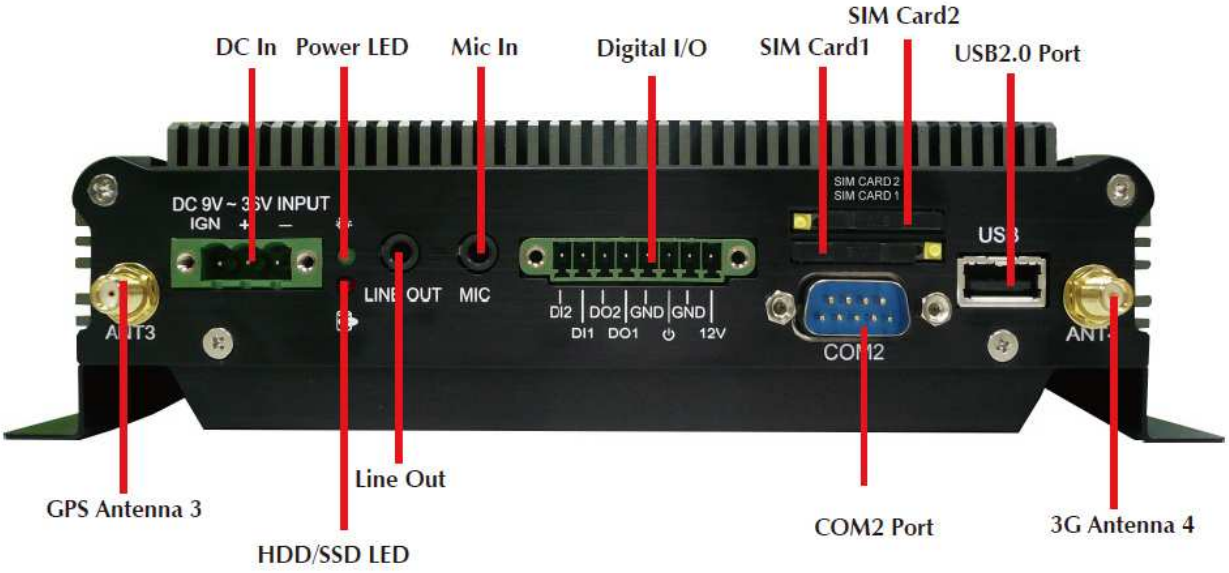
3.7 DIO Connector

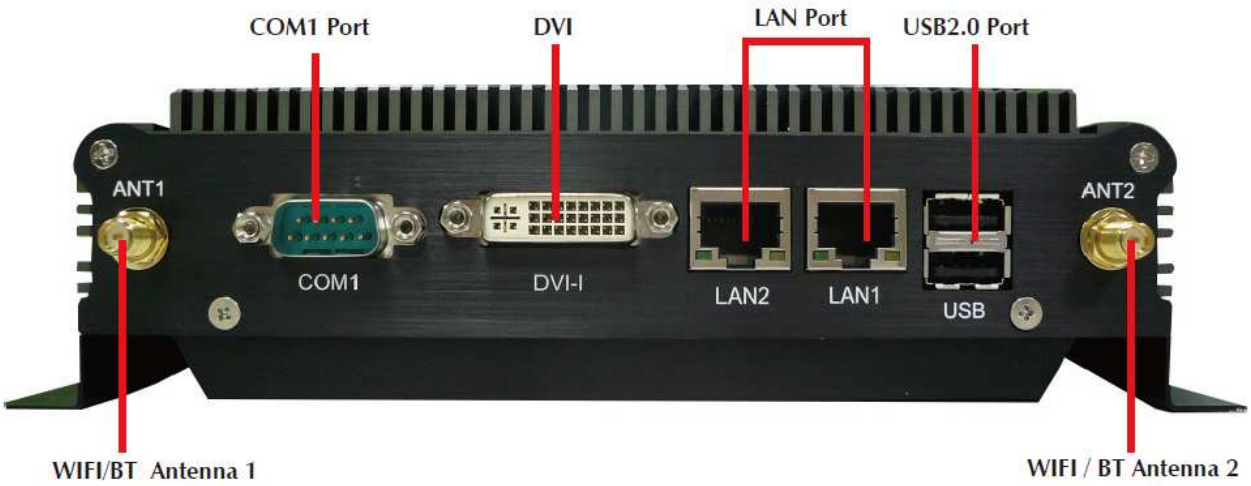


4.0
SYSTEM INSTALLATION

4.0 SYSTEM INSTALLATION

4.1 System Introduction





4.2 Opening Chassis

Step1. Unscrew the four screws of the Back Cover as shown in the picture.

Step2. Unscrew the four screws of Rear/Front Panel as shown in the picture.

Step3. Open the Back Cover as shown in the picture.

4.3 Installing Memory

Step 1. Put Memory on this place as shown in the picture.

Step 2. Hold the Memory with its notch aligned with the Memory socket of the board and insert it at a 30-degreeangle into the socket as shown in the picture.

Step 3. Fully insert the module into the socket until a “click” is heard as shown in the picture.

Step 4. Press down on the Memory so that the tabs of the socket lock on both sides of the module.

4.4 Installing HDD / SSD

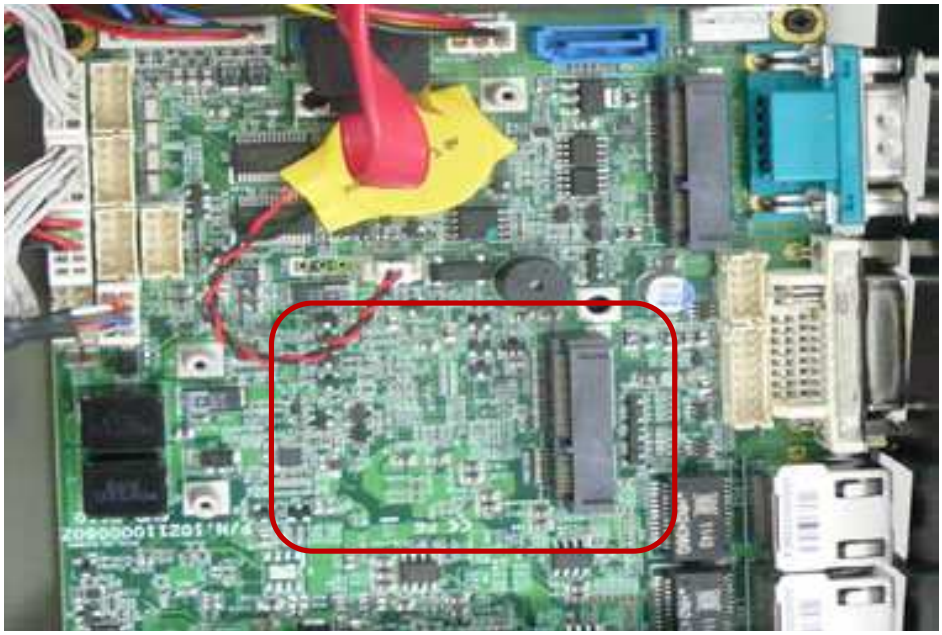
Step 1. Put the HDD on the Back Cover as shown in the picture.

Step 2. Turn over the Back Cover and screw the four screws of the Back Cover as shown in the picture.

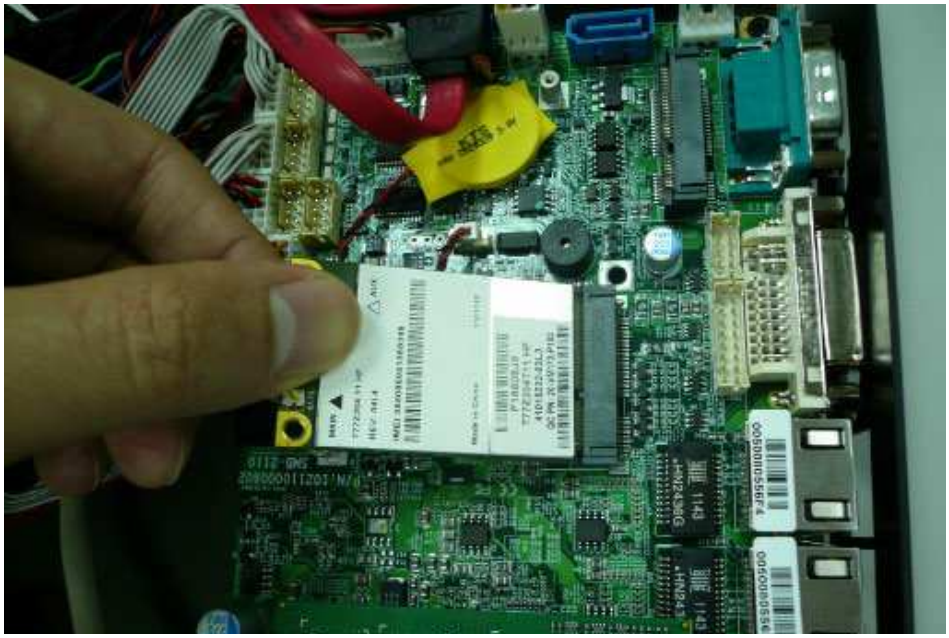
Step 3. Connect the HDD power cable and SATA cable to HDD as shown in the picture.

4.5 Installing MINI PCIe Expansion Card

Step 1. Put MINI PCIe Expansion Card on this place as shown in the picture.



Step 2. Hold the Module with its notch aligned with the socket of the board and insert it at a 30 degree angle into the socket as shown in the picture.

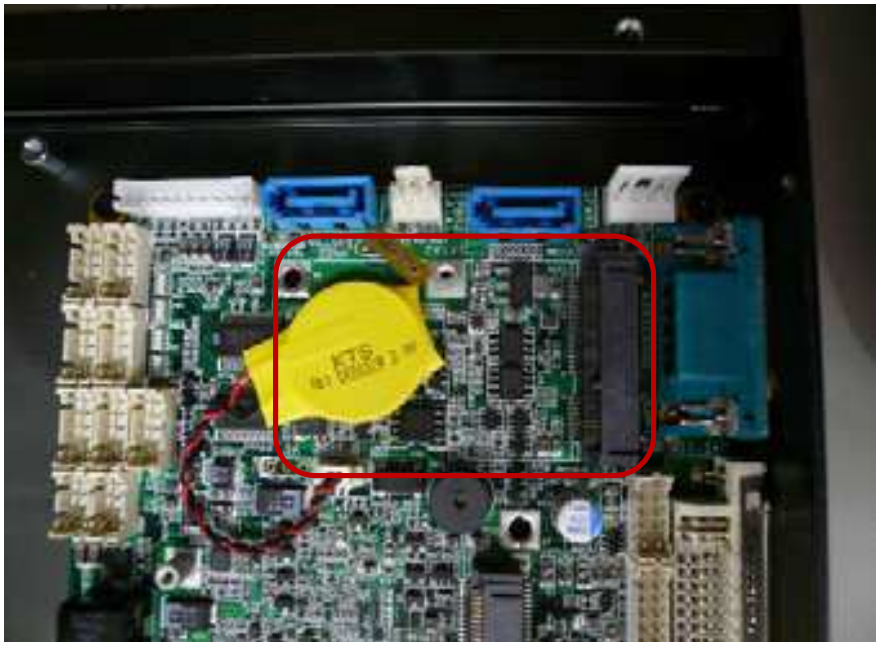


Step 3. Screw two screws to the holder as shown in the picture.

Step 4. Done as shown in the picture.

4.6 Installing MINI PCIe Expansion Card

Step 1. Put MINI PCIe Expansion Card on this place as shown in the picture.



Step 2. Hold the Module with its notch aligned with the socket of the board and insert it at a 30 degree angle into the socket as shown in the picture.

Step 3. Screw two screws to the holder as shown in the picture.

Step 4. Done as shown in the picture.

4.7 Installing SIM Card

Step 1. Use thin stick to push the button as shown in the picture.

Step 2. Take the holder away from front panel as shown in the picture.

Step 3. Put your SIM Card into the holder as shown in the picture.

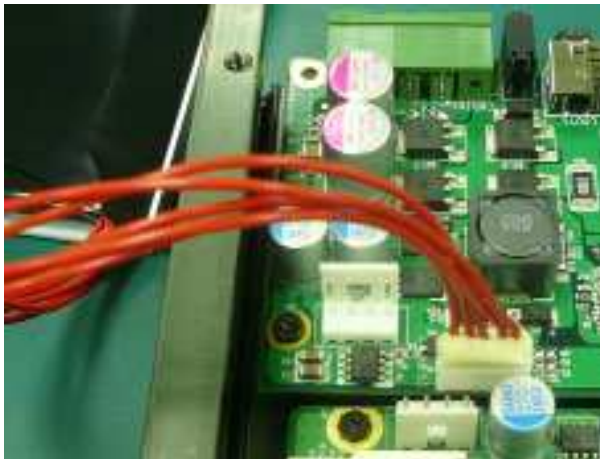
Step 4. Take the SIM card holder and Insert it into the socket as shown in the picture.

Attention:
Please cut the main power when you insert the SIM.
Caution :
The SIM card will be not detected.

4.8 Installing Battery Module

Step 1. Screw two screws on the Back Cover as shown in the picture.

Step 2. Connect the Cable to UPS1 Connector as shown in the picture.



5.0
SYSTEM RESOURCE

5.0 SYSTEM RESOURCE

5.1 Ignition Power Management Quick Guide

Startup/shutdown conditions from the IGNITION signal:

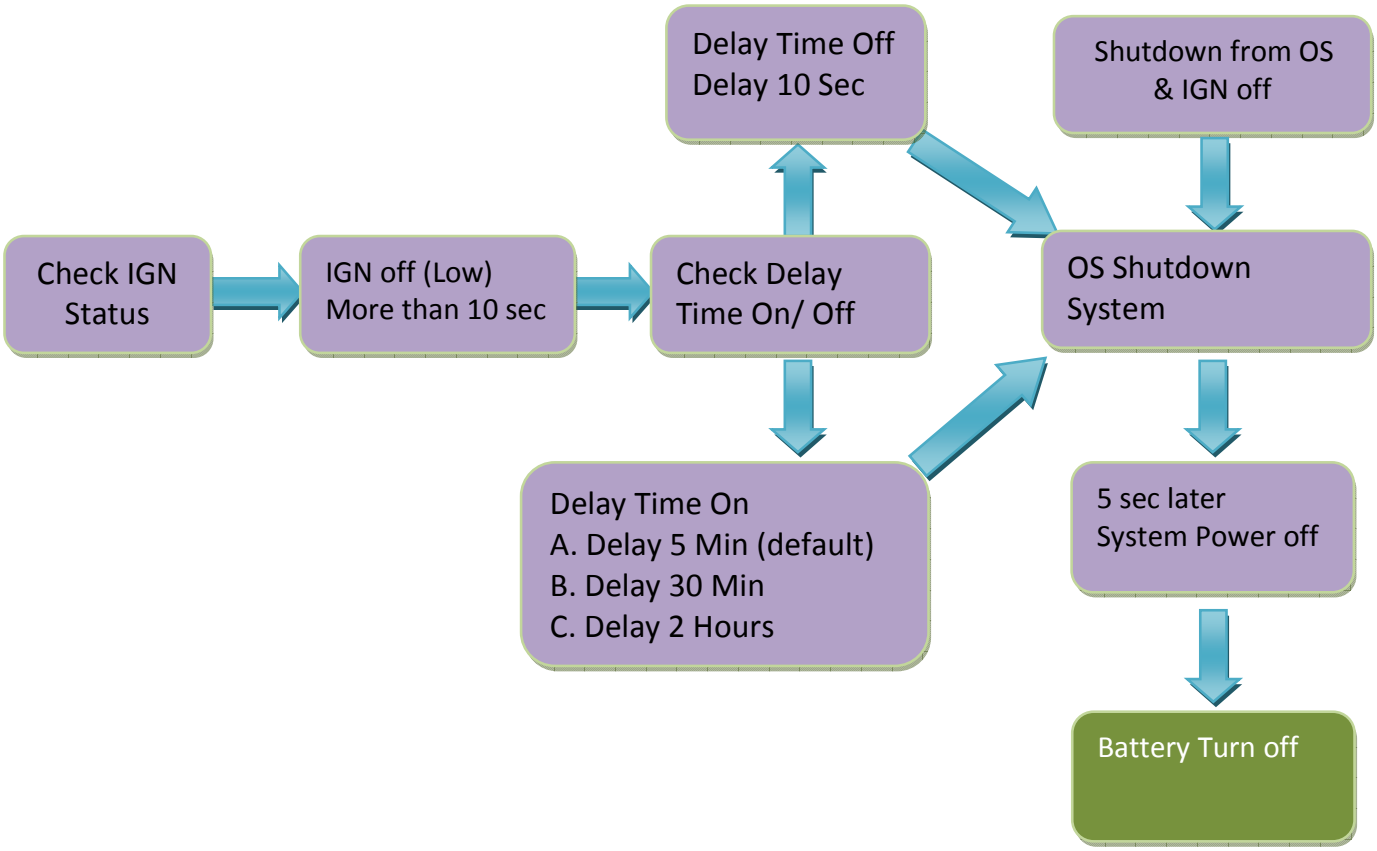
- IGNITION startup signal must be valid during 10 sec. (anti noise protection).
- IGNITION shutdown – IGNITION signal must be inactive during 5 minutes, then PIC controller initiate Power Button signal (**OS must be set to shutdown from the Power Button**). It generate Main Button shutdown event and then goes to complete power off.

Typically the system can start only from IGNITION signal, because startup PIC controller is disconnected from the power source.

The system can be switched off from:

- Power IGNITION OFF signal.
- ACPI OS shutdown
- Power Button – generate ACPI event (OS dependent).

Power Ignition Startup Procedure



Power Ignition Shutdown Procedure

Power Management

- Power-off delay time is selectable by BIOS to disable and enable in 5 mins / 30 mins / 2hrs (Default is 5 mins)
- Ignition On/Off status detectable by SW
- If the ignition is off and the system is still on after 5 minutes, SD-3110 will shut down automatically.
- If the ignition is turned on again and the power-off delay is in progress, SD-3110 will cancel the delay function and will continue to operate normally.
- If the ignition is turned on again and the power-off delay ended, SD-3110 will shut down completely will power-on again automatically.

6.0
BIOS

6.0 BIOS

6.1 Enter The BIOS

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press (DEL) key to enter Setup.

Press DEL to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system by turning it OFF and On or pressing the RESET button. You may also restart the system by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys.

Important

- The items under each BIOS category described in this chapter are under continuous update for better system performance. Therefore, the description may be slightly different from the latest BIOS and should be held for reference only.
- Upon boot-up, the 1st line appearing after the memory count is the BIOS version. It is usually in the format.

SD-3110 Mainboard V1.0 073109 where :

1st digit refers to BIOS maker as A = AMI, W = AWARD, and P = PHOENIX

2nd - 5th digit refers to the model number.

6th digit refers to the chipset as I = Intel, N = NVIDIA, A = AMD and V = VIA.

7th - 8th digit refers to the customer as MS = all standard customers.

V1.0 refers to the BIOS was released.

073109 refers to the date this BIOS was released.

Control Keys

Power on the computer and the system will start POST (Power On Self Test) process. When the message below appears on the screen, press (DEL) key to enter Setup.

< ↑ >	Move to the previous item
< ↓ >	Move to the next item
<← >	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select the item
<Esc>	Jumps to the Exit menu or returns to the main menu from a submenu
<+/PU>	Increase the numeric value or make changes
<-/PD>	Decrease the numeric value or make changes
<F1>	General Help
<F3>	Load Optimized Defaults
<F4>	Save all the CMOS changes and exit

Getting Help

After entering the Setup menu, the first menu you will see is the Main Menu.

Main Menu

The main menu lists the setup functions you can make changes to. You can use the arrow keys (↑↓) to select the item. The on-line description of the highlighted setup function is displayed at the bottom of the screen.

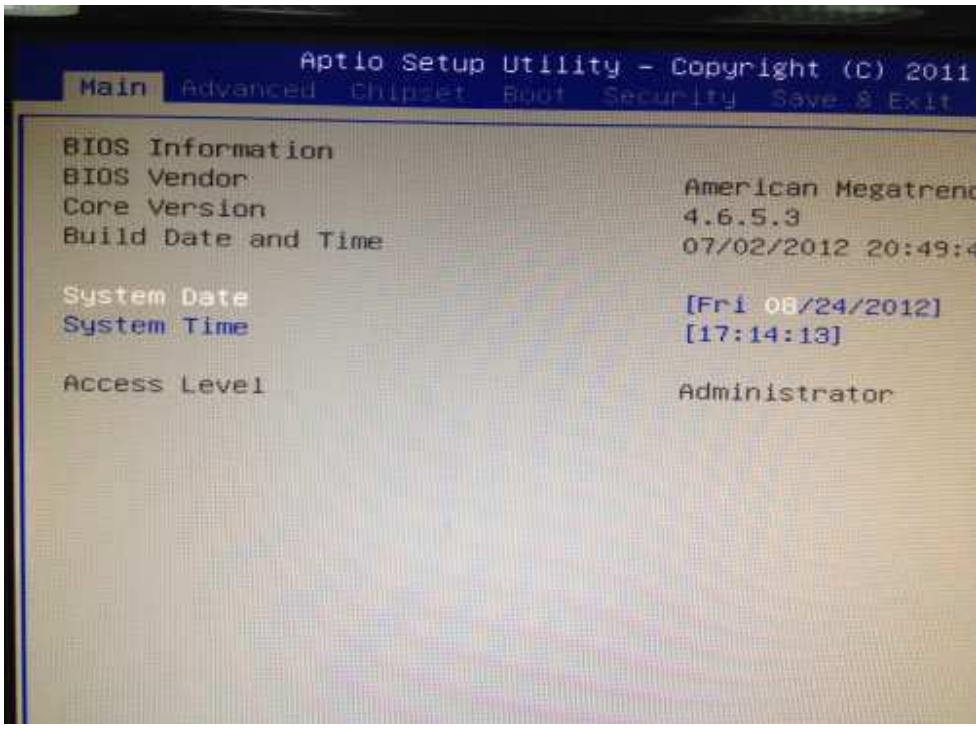
Sub-Menu

If you find a right pointer symbol (as shown in the right view) appears to the left of certain fields that means a sub-menu can be launched from this field. A sub-menu contains additional options for a field parameter. You can use arrow keys (↑↓) to highlight the field and press <Enter> to call up the sub-menu. Then you can use the control keys to enter values and move from field to field within a sub-menu. If you want to return to the main menu, just press the <Esc >.

General Help <F1>

The BIOS setup program provides a General Help screen. You can call up this screen from any menu by simply pressing <F1>. The Help screen lists the appropriate keys to use and the possible selections for the highlighted item. Press <Esc> to exit the Help screen.

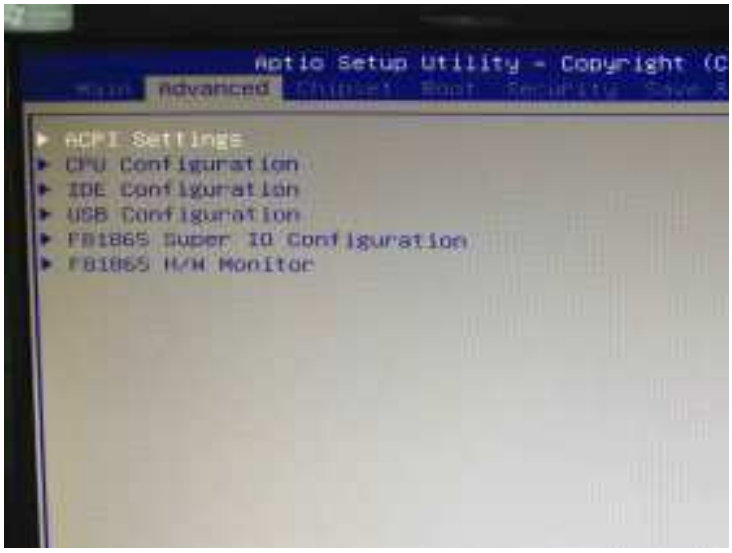
6.2 Main



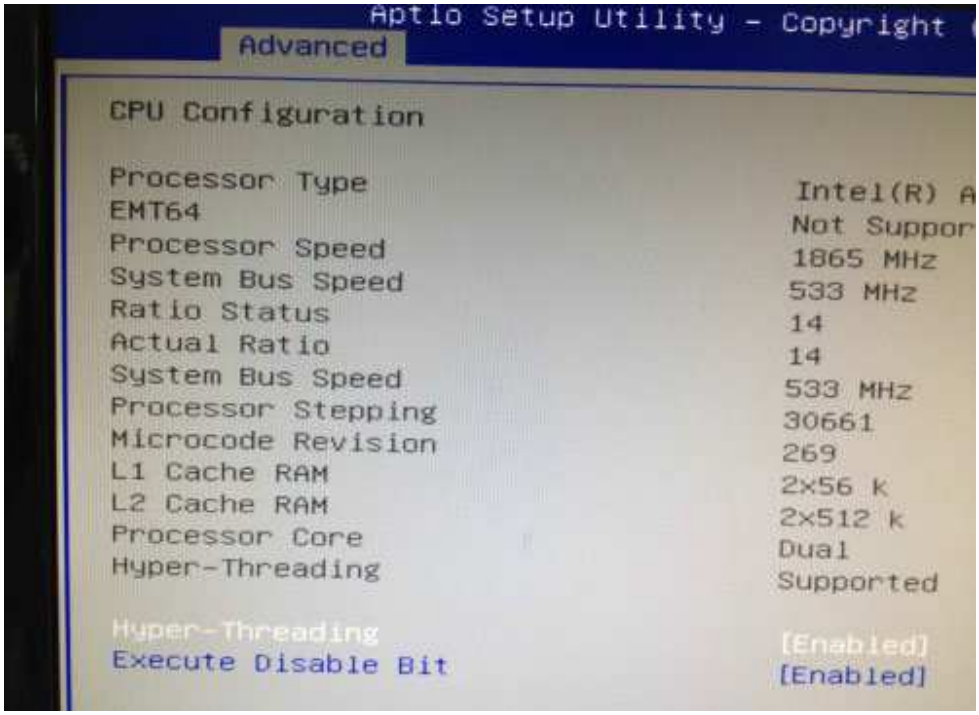
System Time
This setting allows you to set the system time. The time format is <Hour> <Minute> <Second>.

System Date
This setting allows you to set the system Date. The time format is <Day> <Month> <Date> <Year>.

6.3 Advanced



CPU Configuration



» Max CPUID Value Limit

The Max CPUID Value Limit BIOS feature allows you to circumvent problems with older operating systems that do not support the Intel Pentium 4 processor with Hyper-Threading Technology. When enabled, the processor will limit the maximum CPUID input value to 03h when queried, even if the processor supports a higher CPUID input value. When disabled, the processor will return the actual maximum CPUID input value of the processor when queried.

» Execute Disable Bit Capability

Intel's Execute Disable Bit functionality can prevent certain classes of malicious "buffer overflow" attacks when combined with a supporting operating system. This functionality allows the processor to classify areas in memory by where application code can execute and where it cannot. When a malicious worm attempts to insert code in the buffer, the processor disables code execution, preventing damage or worm propagation.

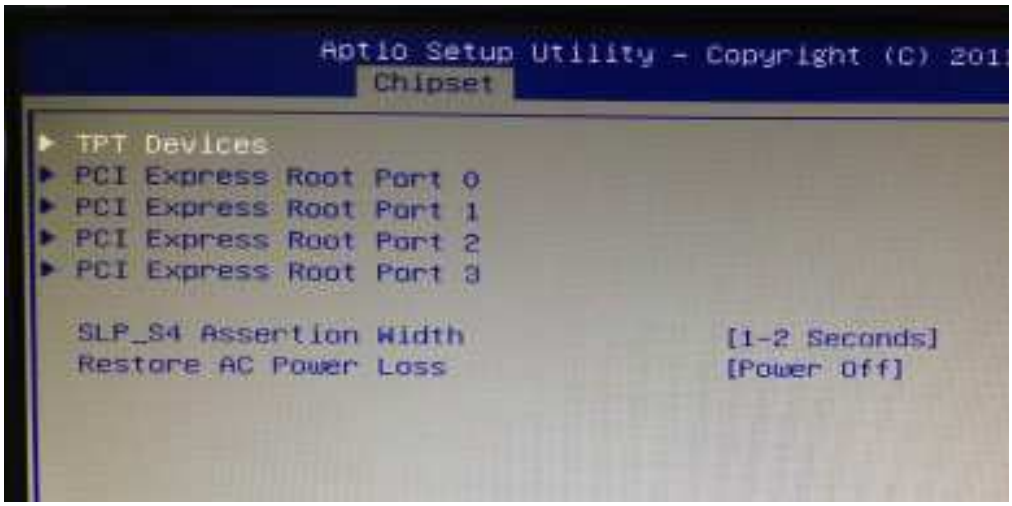
» Hyper Threading Technology

The processor uses Hyper Threading technology to increase transaction rates and reduces end-user response times. The technology treats the two cores inside the processor as two logical processors that can execute instructions simultaneously. In this way, the system performance is highly improved. If you disable the function, the processor will use only one core to execute the instructions. Please disable this item if your operating system doesn't support HT Function, or unreliability and instability may occur.

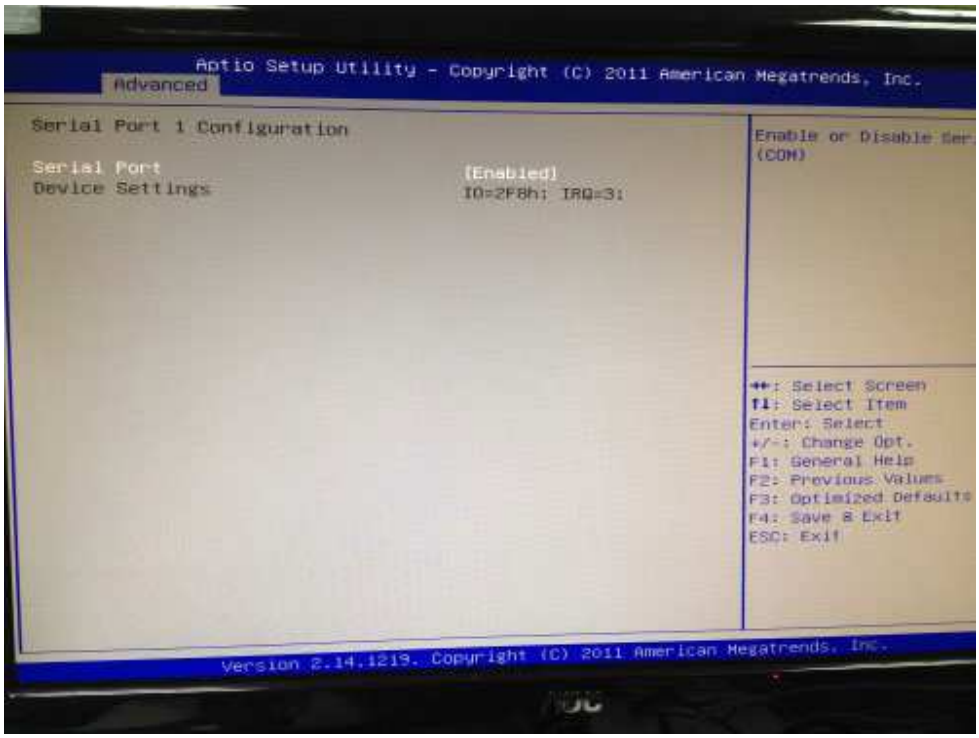
» Intel(R) SpeedStep(tm) Tech

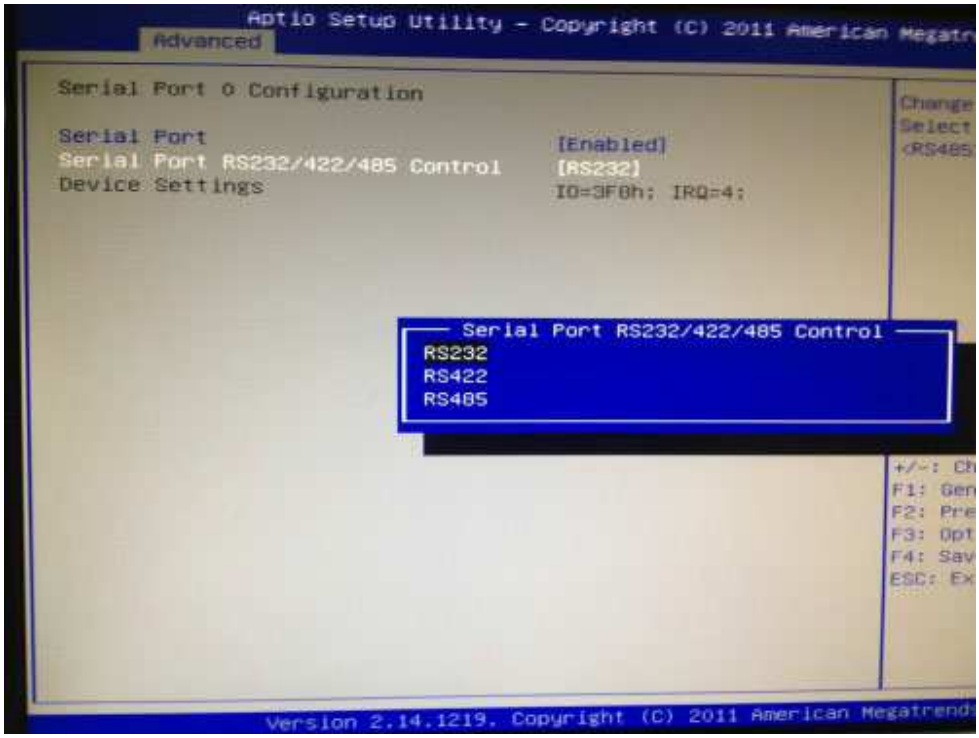
EIST (Enhanced Intel SpeedStep Technology) allows the system to dynamically adjust processor voltage and core frequency, which can result in decreased average power consumption and decreased average heat production.

PCI/PCIE Device Configuration



Super IO Configuration





» Serial Port 0/1/2/3/4/5 Enable or Disable

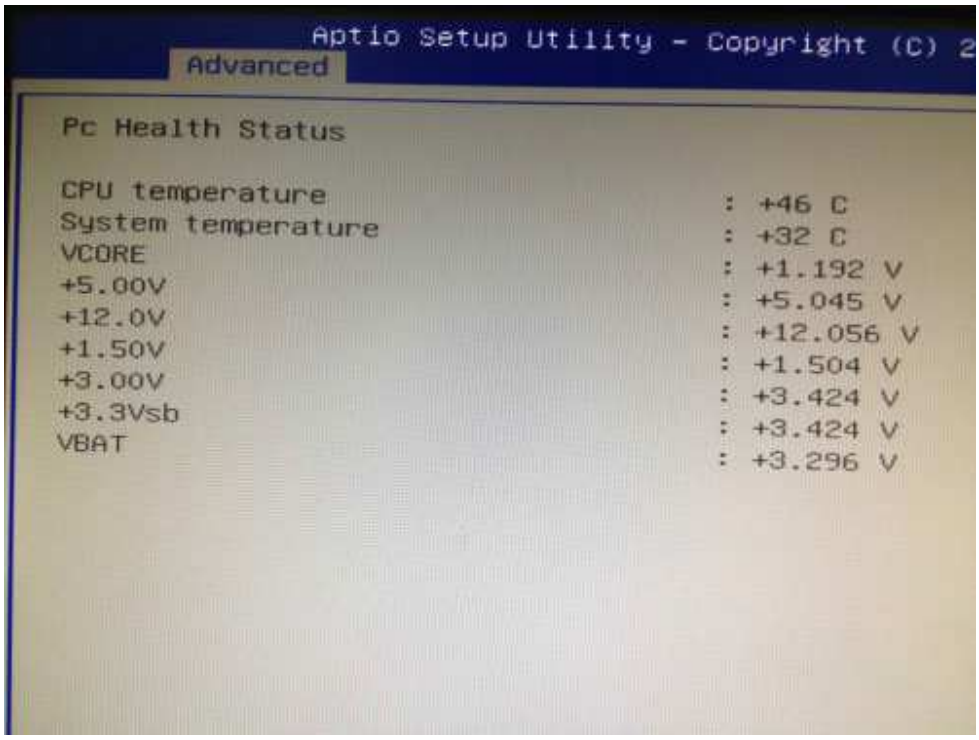
Select an Enable or Disable for the specified serial ports.

» Serial Port 0 Mode

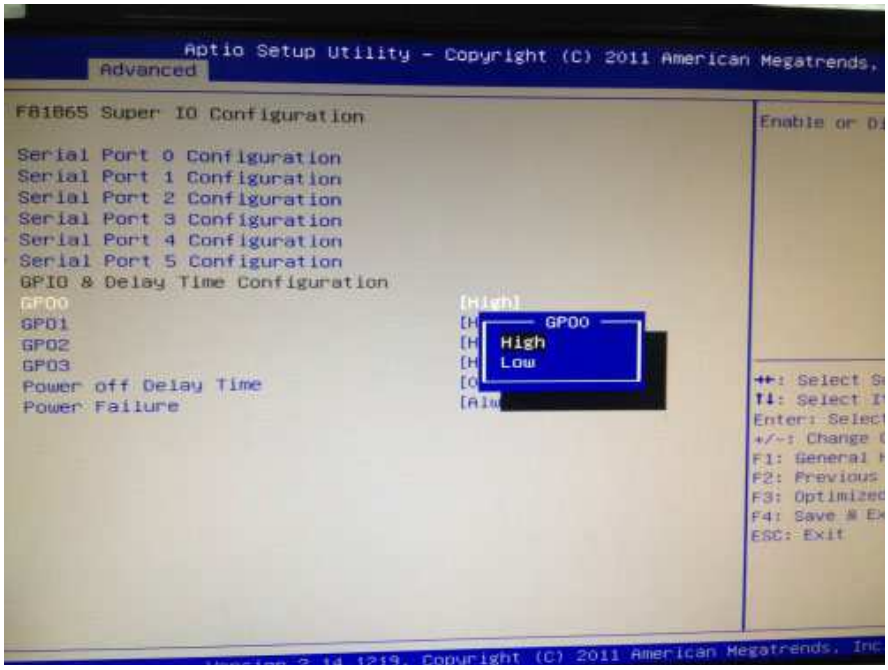
The settings specify the RS-232/RS-422/RS-485 mode of the serial prot 0.

Hardware Health Configuration

These items display the current status of all monitored hardware devices/components such as voltages, temperatures and all fans' speeds.


Aptio Setup Utility - Copyright (C) 2
Advanced
Pc Health Status
CPU temperature : +46 C
System temperature : +32 C
VCORE : +1.192 V
+5.00V : +5.045 V
+12.0V : +12.056 V
+1.50V : +1.504 V
+3.00V : +3.424 V
+3.3Vsb : +3.424 V
VBAT : +3.296 V

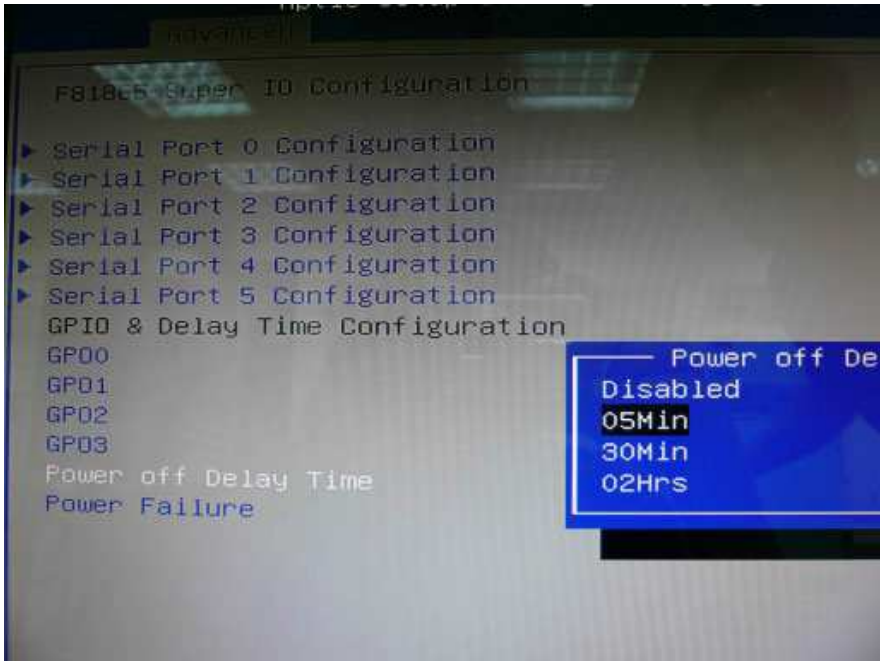
GPIO Configuration



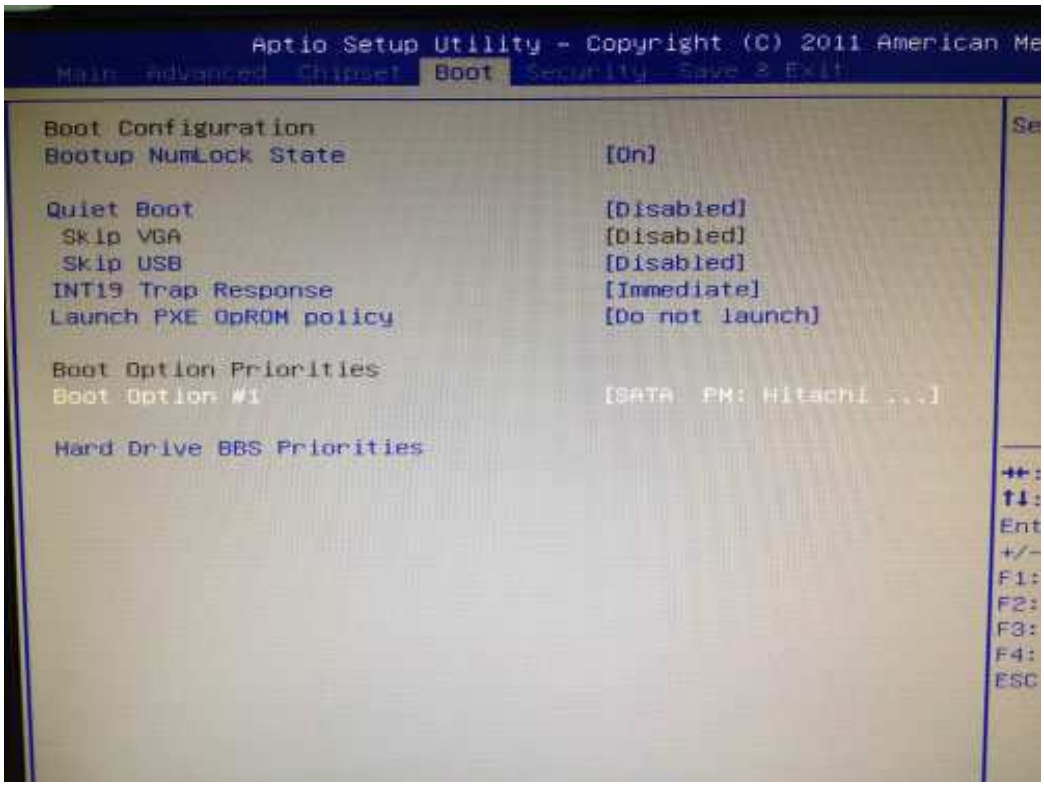
» GPO 0/ 1/ 2/ 3/ Data

These settings configure special GPIO data.

Power off Delay Time Setting



6.4 Boot



» 1st/2nd/3rd Boot Device

The items allow you to set the sequence of boot devices where BIOS attempts to load the disk operating system.

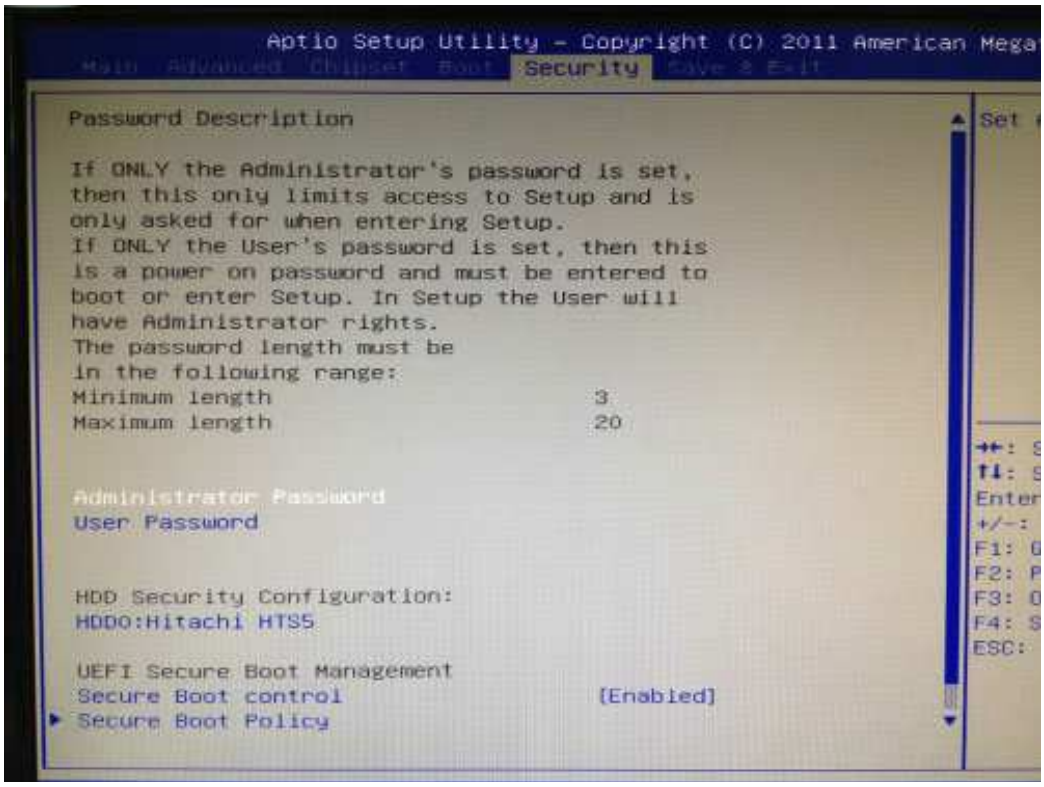
» Try Other Boot Devices

Setting the option to [Enabled] allows the system to try to boot from other device if the system fail to boot from the 1st/2nd/3rd boot device.

» Hard Disk Drives, CD/DVD Drives, USB Drives

These settings allow you to set the boot sequence of the specified devices.

6.5 Security


Aptio Setup Utility – Copyright (C) 2011 American Mega
Security
Password Description
If ONLY the Administrator's password is set,
then this only limits access to Setup and is
only asked for when entering Setup.
If ONLY the User's password is set, then this
is a power on password and must be entered to
boot or enter Setup. In Setup the User will
have Administrator rights.
The password length must be
in the following range:
Minimum length 3
Maximum length 20
Administrator Password
User Password
HDD Security Configuration:
HDD0:Hitachi HTS5
UEFI Secure Boot Management
Secure Boot control [Enabled]
Secure Boot Policy

» Administrator Password

Administrator Password controls access to the BIOS Setup utility. These settings allow you to set or change the administrator password.

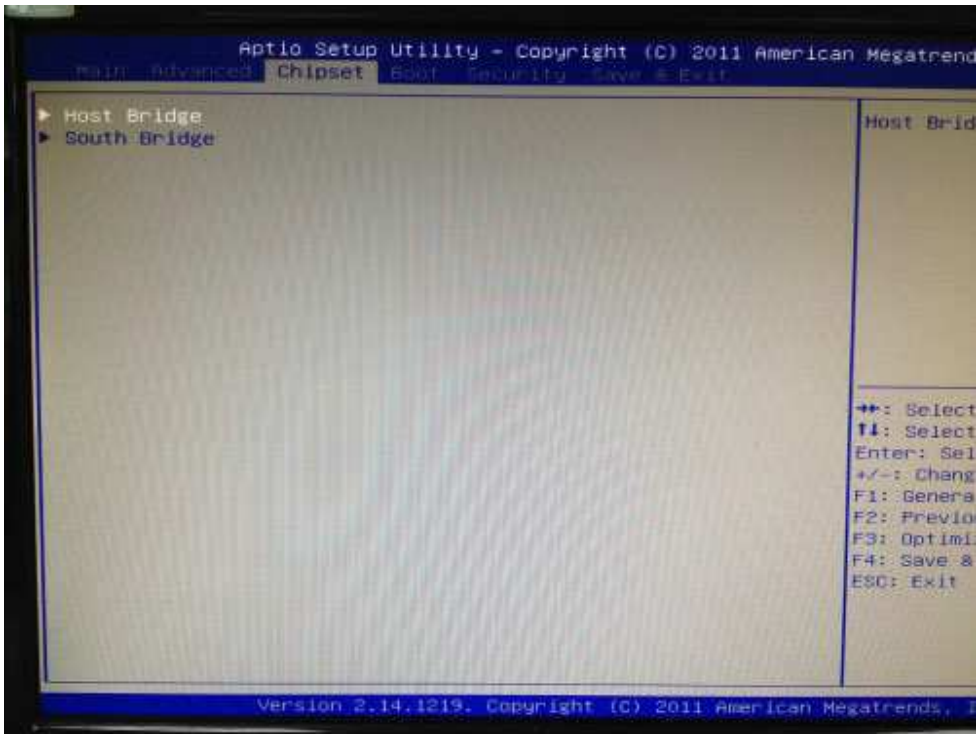
» User Password

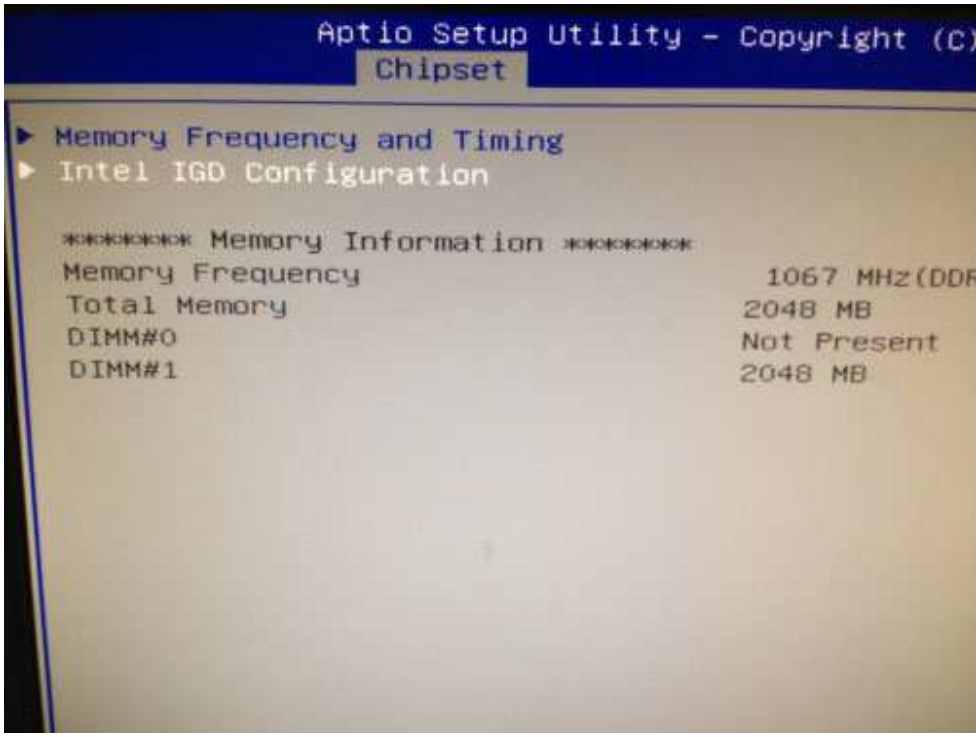
User Password controls access to the system at boot. These settings allow you to set or change the user password.

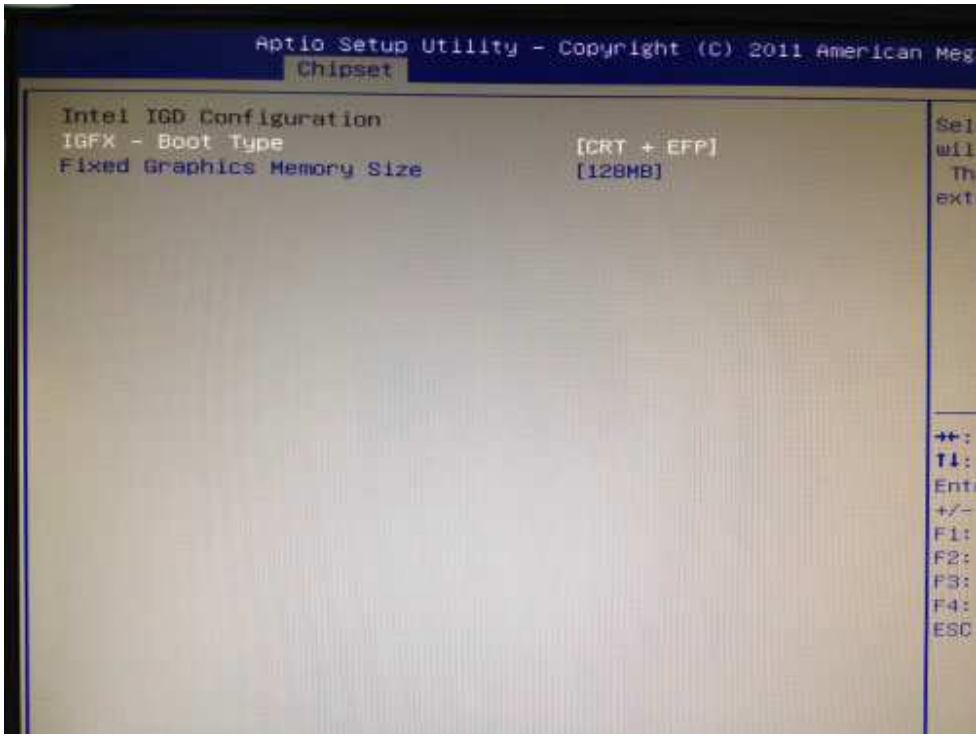
» Boot Sector Virus Protection

This function protects the BIOS from accidental corruption by unauthorized users or computer viruses. When enabled, the BIOS data cannot be changed when attempting to update the BIOS with a Flash utility. To successfully update the BIOS, you will need to disable this Flash Protection function.

6.6 Chipset

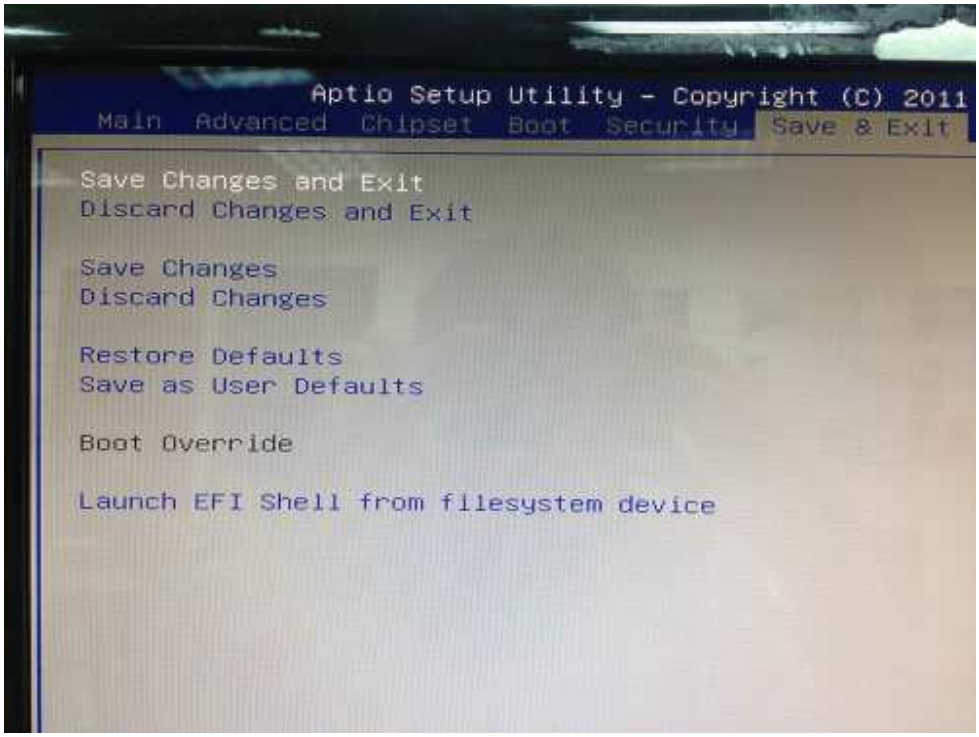

Aptio Setup Utility – Copyright (C) 2011 American Megatrend
Chipset
Host Bridge
South Bridge
Host Brid
→←: Select
↑↓: Select
Enter: Sel
+/-: Chang
F1: Genera
F2: Previo
F3: Optimi
F4: Save &
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends.


Aptio Setup Utility – Copyright (C)
Chipset
Memory Frequency and Timing
Intel IGD Configuration
******* Memory Information *******
Memory Frequency 1067 MHz(DDR
Total Memory 2048 MB
DIMM#0 Not Present
DIMM#1 2048 MB



» Select Graphic Output Mode

6.7 Exit


Aptio Setup Utility – Copyright (C) 2011
Main Advanced Chipset Boot Security Save & Exit
Save Changes and Exit
Discard Changes and Exit
Save Changes
Discard Changes
Restore Defaults
Save as User Defaults
Boot Override
Launch EFI Shell from filesystem device

» Save Changes and Exit
Save changes to CMOS and exit the Setup Utility.

» Discard Changes and Exit
Abandon all changes and exit the Setup Utility.

» Discard Changes
Abandon all changes and continue with the Setup Utility.

» Load Optimal Defaults
Use this menu to load the default values set by the mainboard manufacturer specifically for optimal performance of the mainboard.

» Load Failsafe Defaults
Use this menu to load the default values set by the BIOS vendor for stable system performance